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THE HEALTH MAGAZINE

HYGEIA

AN AMERICAN MEDICAL ASSOCIATION PUBLICATION

Unfinished Portrait of a Doctor

DESPITE THE ADVANCES of medical science, many people retain a "Gay Nineties" conception of what the doctor can do for them.

The picture they hold of the doctor and the knowledge at his disposal is, for today, an incomplete picture—an "unfinished portrait."

All of us picture the doctor as the one to treat or cure us when we're sick.

Many of us know him also as the one who, through preventive measures, can safeguard us against ever having certain diseases. But there's a third part of this picture of a doctor that few of us fully recognize—that is, the doctor as the one to help us attain *more abundant* health.

What is meant by "more abundant health"—in what way can your doctor help you when you're already feeling pretty chipper? Here are a few examples of what we mean:

You may have eye strain—a totally unsuspected visual defect. With this condition discovered and corrected, the chances are you'll find yourself with new mental and physical energy for work and play.

You may be over-weight or under-weight. Obviously, that is not actual sickness. But correction of the condition may let you approach with zest certain pastimes or hobbies you have practically given up because the fatigue they induced robbed them of their fun.

A knee or ankle may bother you enough so that your golf clubs or tennis rackets are gathering dust; or so that you're obliged to ride those little distances that were once so diverting to walk. Your doctor probably can give you back the pleasure of your favorite game or unhampered stride.

Yes, the doctor of today has a three-fold contribution to your well-being. He can *restore* health, *safeguard* health, and *enhance* health. Acquiring this complete picture of him is a definite step toward a more productive, more enjoyable life.

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The World's Largest Makers of Pharmaceutical and Biological Products

See Your Doctor

THE POST-GRADUATE CLINIC

The professor is lecturing on a new treatment of a disease of childhood that has baffled the scientific world for years. These men who listen so eagerly and with such rapt attention and who will ask questions when the lecturer has finished are not medical students or new doctors—they are practising physicians from large cities and small towns, east, west, north, south. They are here at their own expense, to share in the newer knowledge which immediately becomes the common property of all doctors, and through your doctor, your property. It is inspiring to think that the medical profession never keeps secret its discoveries and advancements.

The DOCTORS' VACATION

If any person is entitled to frequent rests and vacations, it is your physician. From early morning until into the night he is "on the go". Not only does he have his own personal problems, like every other human being, but he carries in addition the burden and the nervous strain of sharing every patient's physical pains, and mental and spiritual trials and tribulations.

If your doctor were to play golf every day, go fishing every week-end, and take a month off every summer and winter, still "the labourer would be worthy of his hire".

But if you could see your doctor on some of his "vacations", you would find him taking post-graduate work, attending clinics, medical meetings or exhibits—studying the methods of other doctors here and abroad. To him, this change of scene is a "vacation". To you, his increasing search for newer and better methods means better service.

Do you know of any man in any other walk of life who so habitually subserves his own interests to the end that you and your children may live better and longer and happier?

This space is devoted to the interest of better babies by MEAD JOHNSON & COMPANY, *Evansville, Ind.*

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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JULY 1938 Vol. 16 No. 7

HYGEIA

THE HEALTH MAGAZINE

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PRESENTING

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RICHARD ADAMS LEARNED, executive secretary, Society for Instruction in First Aid to the Injured, Inc., who presents a paper which was broadcast under the auspices of that society in conjunction with the New York Tuberculosis and Health Association and the Medical Information Bureau, New York Academy of Medicine.

ALBERT SOILAND, M.D., senior commodore, Pacific Coast Yachting Association, and founder of the Newport Harbor (Calif.) Yacht Club. Some years ago, Dr. Soiland introduced HYGEIA readers to the Snowbirds, then fledglings but now a lusty thriving flock.

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EDITORIAL

Professional or Mechanized Medicine

ONE OF THE MOST serious charges regularly preferred against the socialization of medicine is its interference with what is usually characterized as the mutual relationship between doctor and patient. Not long ago a critic referred sneeringly in an address before a large medical audience to the "sacrosanct" relationship between doctor and patient. Yet as long as patients are human beings and not merely collections of organs and tissues, some well and some diseased, this relationship will be a vital factor in the best type of medical practice. Even a mail-order doctor or a radio prescriber can suggest a diagnosis or a treatment after studying a record of the patient's symptoms. But no physician with an understanding of the true nature of disease ever attempts such a performance. Only by a comprehension of the patient as a whole is it possible to evaluate scientifically the difficulties for which he consults the physician.

The most effective criticism thus far brought against various socialized schemes of medical practice is their failure to sustain this professional relationship. The physician salaried for the care of any considerable group of employees or patients soon recognizes that his responsibility is to the employer—a corporation, an insurance company or a contracting board—rather than to the patient. Throughout the majority of American municipalities where, in the past, a physician was frequently employed on a salary to care for the poor, even now there is taking place an evolution toward a system whereby even the poor may have to some extent the choice of a physician. When the principles of ethics which guide the American Medical Association today were first elaborated, the importance of allowing even the indigent in hospitals as much choice as possible was emphasized.

Notwithstanding this experience of many centuries, some of those who are urging a revolution in the nature of medical practice, perhaps misled by what they saw of mass action in the World War or perhaps insufficiently critical of what has taken place abroad, are suggesting increasing entrance by the government, either local, state or federal, into the care of the sick. How can they fail to see that the doctor who is a cog in a bureaucracy must inevitably become more concerned with the case and with the record of the case than with the patient himself? Surely some way can be found to supply all those who require medical care with an adequate service, without taking from the practice of medicine the humanitarianism which is its very basis. No doubt consideration will be given most seriously to this point in the conference on a National Health Program which has been called by Josephine Roche, chairman of the President's Interdepartmental Committee, and which will be held in Washington on July 18, 19 and 20. In this conference some hundreds of persons concerned with various aspects of medical care will participate.

The House of Delegates of the American Medical Association has declared repeatedly that it will cooperate with the government or with any other agency in securing a wider distribution of medical service. Every one should have good medical care. But the practice of medicine is a doctor's problem. Only the doctor is entitled by training, by law and by experience to care for the sick. Medicine is still a profession. It can never become a business or a trade. It should never be made the subservient tool of a governmental bureaucracy.

Dangerous Lullabies

LOIS MATTOX MILLER *warns of the harm that may lurk in sleeping pills, "sedatives" and other forms of "store bought" slumber*

AMERICANS MUST be finding it increasingly hard to get to sleep. Physicians report a steady increase in the number of cases of insomnia that pass through their offices. That isn't so disturbing; usually the physician can relieve the patient's sleeplessness while seeking its underlying cause—for insomnia is, after all, a symptom, not a disease. The thing that is really alarming is the fact that the overwhelming majority of insomniacs aren't seeking medical help but are doping themselves with sleeping pills.

Sales of sleeping pills are "enormous," in the words of Dr. Mary M. Rising of the University of Chicago, herself one of the scientists who helped develop some of these drugs. "Millions are spent for the purchase of these drugs," says Dr. Soma Weiss, associate professor of medicine, Harvard Medical School. "Their consumption is widespread and they are used without medical supervision." Druggists in large cities say that sleeping pills now sell as fast as aspirin and laxatives. Medical journals express their concern, and the situation is the subject of frequent papers at meetings of medical societies.

Once the sleeping pill habit was almost the monopoly of the smart set, or more accurately, the hectic crowd now called "café society." It has spread until debutantes, business men, stenographers and housewives are steady purchasers of the "sedatives" sold under a score of trade names—allonal, alurate, amytal, dial, luminal, ipral, nembutal, neonal, trional, veronal and so on.

For a picture of the conditions in a setting far removed from smart night clubs, read what one physician wrote in a medical journal:

> The average physician I am sure is not cognizant of the great frequency of the use of these drugs. I could report at least twenty cases here in Boone County, W. Va. Some are now in the asylum, some in jail, some in Charleston hospitals, eight or ten are home, well, after I have taken the drug away from them and explained its cumulative effect—and some are dead. Others will die, lose their business or be committed to an asylum before the law-making bodies wake up to the fact that they are allowing drugs to be sold to the public as easily and as cheaply as aspirin, but almost as dangerous as morphine.

Statistics are hard to come by. Principal evidence of the vast growth of addiction is the testimony of druggists, the steady multiplication of brands offered for sale and finally the increase in the number of victims who eventually reach the physician's office or the hospital.

Dr. G. Wilse Robinson Jr. of the Neurological Hospital, Kansas City, Mo., told the Missouri State Medical Association, "More than seventy-five per cent of patients in our hospital have been taking large doses of barbiturates for more or less extended periods of time before admission."

Because he doesn't sleep well, the victim turns to a "harmless" pill recommended by a friend. He sticks to his "sedative," using larger and larger doses, until some day he is rushed off to the emergency hospital suffering from acute poisoning or even accused by his friends of temporary insanity; or perhaps he has to consult a specialist about his torturing itching or a kidney ailment which seems mysterious. Even then, he seldom suspects the real cause of his illness.

There is no such thing as a "harmless" sleeping pill. There are a number which are useful blessings when given to just the right person in the right dosage under the observation of a physician. But there is none which is safe for Mr. Average Man to use at his own whim.

This is recognized in Europe, where most of these drugs no longer can be purchased without a prescription. Some states and cities in this country have put up bars—but, as in New York City, where the Sanitary Code forbids their sale, they nevertheless can be purchased almost everywhere. You will find ethical pharmacists who refuse to sell hypnotics except on a physician's order; but you will find more of them who say, "If I refuse a customer, he'll just buy down the street."

Now, here are the facts about the popular sleeping pills:

Strictly speaking, these are not sedatives at all. Sedatives are drugs that soothe the nerves but do not necessarily induce sleep. The sole purpose of the hypnotics is to induce sleep.

Not many years ago the physician who had to administer a sleep-inducing drug was limited to the use of opiates, morphine and codeine, which had to be handled judiciously because they are strongly habit forming. Chloral hydrate was an alternative. While it lacked many of the vicious propensities of the opiates, it was nevertheless habit forming, caused harmful cardiac depression and irritated the mucous

Stephen Deutch

WHEN SLEEPLESSNESS LEADS THE VICTIM TO THE "HARMLESS" PILL, IT STARTS A VICIOUS CIRCLE, WHICH MAY INCLUDE COMPLICATIONS, SUCH AS A TORTUROUS ITCHING, WHICH, IN TURN, MAY ALSO LEAD TO SLEEPLESSNESS AND EVENTUALLY TO THE PHYSICIAN.

membranes which line the stomach and intestines. The medical profession was still in favor of the opiates which would have a maximum of their hypnotic effects and a minimum of their dangerous and harmful secondary effects.

Then in 1903 the great German chemist Emil Fischer produced the first of the barbituric acid derivatives, veronal, or barbital. From his compound there has stemmed a long line of synthetic drugs known as the barbiturates. Some, like luminal, are essentially hypnotics and are used to induce sleep. Sometimes these are combined with analgesics, like pyramidon, which relieve pain.

Luminal, or phenobarbital, has proved to be an invaluable agent in the treatment of epilepsy and other nervous diseases because of its specific action on the motor area of the brain, which controls nerve impulses to the muscles.

Each of the barbituric acid compounds—and there are many of them, with new preparations being placed on the market almost every month by pharmaceutic manufacturers—has its peculiarities, good and bad. The physician has to follow a voluminous literature in the medical journals in order to keep abreast of all the known effects of each type. This knowledge enables him to prescribe the most effective hypnotic that may be used safely for each particular patient's case. The Council on Pharmacy and Chemistry of the American Medical Association has accepted for its book "New and Nonofficial Remedies" those products advertised with truthful claims exclusively to the medical profession.

None of the hypnotics is without its accompanying dangers. Some of them, if misapplied, will have a harmful effect on the heart or the nervous system. Others do not decompose easily so that they can be eliminated normally; instead they tend to accumulate in the system until the organism becomes acutely poisoned.

Instead of insomnia, the doctors now have to deal with barbituric acid poisoning or other effects of these preparations. Some of the people who couldn't get to sleep in the first place now lie awake nights suffering from itching and eruptions. The prolonged use of barbiturates often produces in sensitive persons severe and painful skin rashes that sometimes cover the entire body. Other confirmed users suffer hallucinations, temporary mental disturbances, sexual disorders or even death. Suicide by taking "an overdose of sleeping tablets" is a routine news item.

"Oh, an overdose of anything will kill you!" is often the pat rejoinder of many users who are warned. They are still unaware of the insidious ways of these "harmless" drugs. All hypnotics decrease the inhibitions. Thus the person who takes a tablet and then lies back and waits for sleep to come (when even fifteen minutes can seem an eternity!) will find a lot more difficulty in resisting the urge to take a second tablet. It is part of the vicious circle that hypnotic users soon find themselves traveling.

The doctors issue a special word of warning against the careless use of hypnotics by people who drink. The person whose sleeplessness is due to abuse of alcohol would do well to avoid sleeping pills. Alcohol increases the toxicity of the barbituric acid derivatives and hastens their poisonous effects.

There is one type of patented sleep producer on the market which has a chloral hydrate base. Since this sleep producer is called a "mild sedative" it may easily be picked up by drinkers with a "hangover." Yet chloral hydrate acts disastrously in the presence of alcohol.

There is no doubt that many of the people who are now jeopardizing their health by using hypnotic drugs "recommended by a friend" really need hypnotics and would benefit by their effects. But they must have the proper drug that is suited to their particular physical condition and nervous temperament. It must be taken in just the right doses and only over a limited period of time.

A safe rule to follow is that any person who needs a drug to put him to sleep needs to see a doctor first.

This is no medical bugaboo—a ruse to scare the recalcitrant patient back into the doctor's office. The creative chemists who struggled for years to make these drugs possible are thoroughly alarmed by what is happening through the misuse of their scientific handiwork.

Dr. Rising, research chemist, has done extensive work in synthetic drugs. During the World War, when our supply of barbiturates from Germany was cut off, she developed an important method of producing luminal, for which there was a pathetic need at the time in the treatment of epileptics. Dr. Rising says about hypnotics:

> Such drugs, like any other, poison the body and should only be used in the time of real need, and then only under the observation of a competent physician. Hypnotics are habit forming. They are not as dangerous in this respect as opiates, but under no condition should they be used in excessive quantities for an extended time. It has been proved by experiment that the nerve tissues of the body may be irreparably injured by the prolonged use of hypnotics. Doctors and druggists and others in close touch with the use and sale of drugs deplore the fact that allonal, veronal and other ureides may be bought without prescription, and they believe that ultimately their sale will be restricted as in the case of opiates. The present enormous sales indicate that persons who are wholly unaware of the harmful pathological effects of these drugs when used without a doctor's prescription are doing themselves serious injury.

Doctors and informed laymen are convinced that a federal law will have to be framed to protect the public against the evils of the sleep induced by these dangerous lullabies. But until such a law is enacted—and enforced—the wise person will look on all forms of "store bought" slumber as harmful and habit forming.

Shoes for Growing Feet

By ETHEL OWEN ADAIR

AN IMPORTANT DATE in a baby's life is the day he gets his first pair of shoes. The fate of his foot health may be determined at that time. The chubby little feet of the smiling youngster encase one fourth of all the bones in the entire body—twenty-six separate bones in each foot.

These twenty-six bones have been designed and arranged by nature to form a wonderfully adjusted support for the body. In a normal healthy condition, this support acts as a shock absorber and a propeller for the body.

The proper kind of shoes worn from infancy help the young American to build a sturdy body, strong constitution and vigorous health. These are inherent rights of every child. Improperly fitted shoes will in time cause painful foot ailments and bad posture.

Even though some adults use their corns to predict rain, it is much safer and less painful to depend on the weather man. Corns and bunions are so painful that they hurt in all kinds of weather.

The symptoms of foot ailments warn the victim just as symptoms are forerunners in other ailments. Learn to recognize them. The "pigeon-toed" attitude in walking or standing indicates that the child is trying to aid nature in distributing the weight of the body on the feet.

Another warning for the parent and teacher is the apparent lack of body control or balance. A group of carefree children scamper across the playground. Tom, who is apparently normal, stumbles and falls. Some jester says, "Tom, pick up your feet," or the girls titter. The incident is indelibly stamped on Tom's plastic mind. Although he likes baseball and other active games, if similar incidents occur frequently, Tom is likely to seek other and perhaps less desirable ways of spending his leisure time.

Mary wanted to be a Girl Scout. But when she was a tiny girl with curls, her mother insisted on buying shoes that she thought looked nice on Mary's long slender foot, with the result that since she was a toddler, Mary had worn shoes that were too short for her.

Girl Scouts dote on hikes and explorations. But Mary's feet caused her to grow weary before the other girls did, and so she had less energy and pep for fun at the end of the trail. Naturally then, she did not thoroughly enjoy scouting and missed many opportunities for learning and good times with the group.

Minor foot ailments, however, may be overcome with correctly fitted shoes. For instance, if a child stands too far on the edge of his foot, a small wedge of leather will throw the weight correctly. Shoes may be built up in any way necessary to balance the weight. Time will overcome the trouble.

Correctly fitted shoes permit the foot to function in the orderly natural way; but when necessary they must guide the foot bones and muscles into their correct positions and hold them there firmly and comfortably.

Shoes for growing feet should adequately meet these requirements: a full round toe, snug fitting arch, broad heel base, straight inner line and flexibility. The sum of these is a shoe that lets the foot alone.

The approved method of fitting is simple. Stand the child on a piece of paper, and trace around his foot. Take the cut-out pattern to the shop. Select shoes that are one inch longer and one-half inch wider. The shoes may seem too large at first, but experienced mothers know that children usually outgrow instead of outwear their shoes.

Shoes are more than an article of dress. If the hat does not exactly fit, no physical harm is done; and one can go without a hat in polite society. With shoes it is different; for foot health, shoes must be chosen with care.

COLD BATHS and a COLD TOMBSTONE

By ROY TEMPLE HOUSE

AS A YOUNG school teacher, I was connected for a time with a boys' school whose director, or "warden," a fine, strong character, later a bishop in his denomination, has long since died. A few weeks after my arrival I walked briskly across the campus —it was a chilly day of early winter—to interview my superior officer. He was just emerging from his shower bath, blue and with his teeth chattering.

"An excellent practice," gasped the excellent warden, shivering miserably as he spoke. "It hardens you, gives you vitality and makes you proof against colds and all sorts of disorders. I think you would do well to begin starting every day with a cold bath yourself."

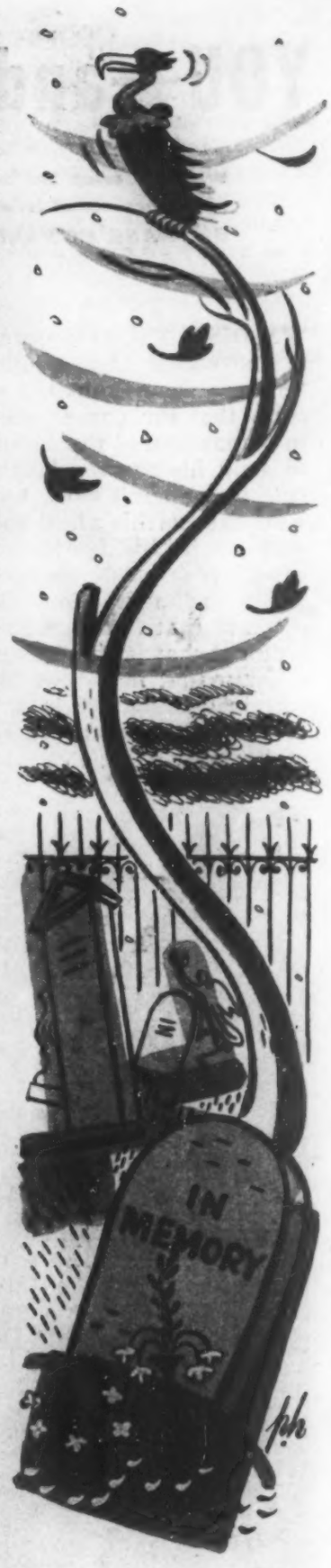
As the warden's docile young disciple, I *did* make a few feeble efforts to take a cold bath of winter mornings; but I never enjoyed it and soon abandoned even a milksop pretense at going through the motions of one. If I really stood squarely under the icy rain it made me miserable. The much vaunted warm reaction was not always forthcoming; and if it did not come it took me half the morning to get comfortably warm again. The more I have heard and seen of cold baths since, the surer I have become that unless you are an iron man they had better be resorted to with caution. Like heavy gymnastics, fasting and other strenuous practices, they are all right if you are strong enough to stand them; but if you aren't sure you are strong enough they are likely to do you more harm than good.

It is probably not a large fraction of the population that have the courage and the devotion of the Reverend Warden. He was always something of an ascetic and a self punisher, like the old flagellants who wore hair shirts and beat their backs bloody. There are not many of us who are brave enough to take ice-cold

baths in December, even if we were sure they would make iron men of us. But in the hot summer, when our systems may be run-down and our powers of resistance low, I think many of us are in more serious danger of injuring ourselves. When we come home from business perspiring and suffering, the temptation is strong to run the bathtub half full of cold water and jump in. If we *were* iron men, perhaps sticking us into the water as the blacksmith used to do with his red-hot horseshoe might be a satisfactory way of cooling us. But many of us are made of substance much more like glass than iron, and it would be safer for us to change our temperature slowly.

A cold bath on a hot afternoon is one of the most delightful experiences imaginable, and it is almost worth while living in a hot, sultry summer climate in order to be able to enjoy it to the full. But if you are at all inclined to be delicate, especially if your heart is not strong, you had better take a little time about exposing your heated body to the temperature of running water. It may even be a judicious procedure to run a little hot water into the tub before you start the cold water coming. Then don't fill the tub higher than three or four inches, at least at the start. Step in, and remain standing for a while, spreading the cool water over your legs and body with the washcloth. When you think you can sit down without shock, do so with your knees drawn up, and continue applying the washcloth. In two or three minutes you can probably sit down flat without discomfort. Then douse the cold water well over your chest and back before you lie down. When the water no longer feels so distressingly cold, that is, by the time the temperature of your body has slowly cooled down to within a few degrees of the temperature of the water, you can safely turn in more of it if you wish and bury yourself in it up to your neck. It is thus possible for the frailest person, without suffering any physical discomfort, to lower his bodily temperature to a delightful coolness, and if he has taken his bath toward the end of the day, to come out into what might otherwise be an unpleasantly tepid evening, refreshed and cheerful till the cool night comes on.

What the body needs in the enervating hot weather is treatment that is soothing and relaxing. In hot weather you do not burden your system with rich foods, and you don't whip it up with alcohol and stimulants. If you do, something is likely to give way. Cold water in hot weather is one of nature's most blessed boons, but cold water applied suddenly, either externally or internally, is shocking. Like many other good things, it is good only when resorted to cautiously and in moderation. It is to be feared that cold baths have been the means of ushering many impatient souls into an eternity of hotness.



YOU—and YOUR CHILD'S CAMP: II

What the camp has a right to demand of the parents of its campers is shown

By FRANK HOWARD RICHARDSON

IN DISCUSSING the organized summer camp movement last month, it was found that there were a number of definite health features that the parent was thoroughly justified in demanding of the camp to which he planned to send his son or daughter. But it's a poor rule that doesn't work both ways. The parent who expects his child to get the most in the way of health benefits out of the camping experience must contribute certain definite things to the situation. The better camps will demand that he do this; in fact, he may well inquire what is the reason for the omission, if a camp that he is considering does *not* make certain demands of him. Just what are some of the things that the camp should demand of the parent?

Modern parents realize that it is the part of common sense and ordinary prudence to give their children certain protective inoculations; in fact, city ordinances and school regulations have made some of them compulsory in the more advanced parts of the country. Among these are vaccination for smallpox; inoculation for diphtheria, proved successful by negative Schick test; typhoid inoculation, and the more recently developed inoculation against whooping cough. The camp that is alert to its health opportunities will demand some, if not all, of these of its prospective campers. Especially will it insist on the typhoid protection, as it is impossible to be sure of the purity of the source of every bit of water drunk by campers during a whole summer season.

Some camp physicians feel that youngsters not already protected against typhoid should be inoculated on their arrival. But it is so much better to save these delightful summer days for camp activities than to clutter them with the discomfort attendant on high temperatures and

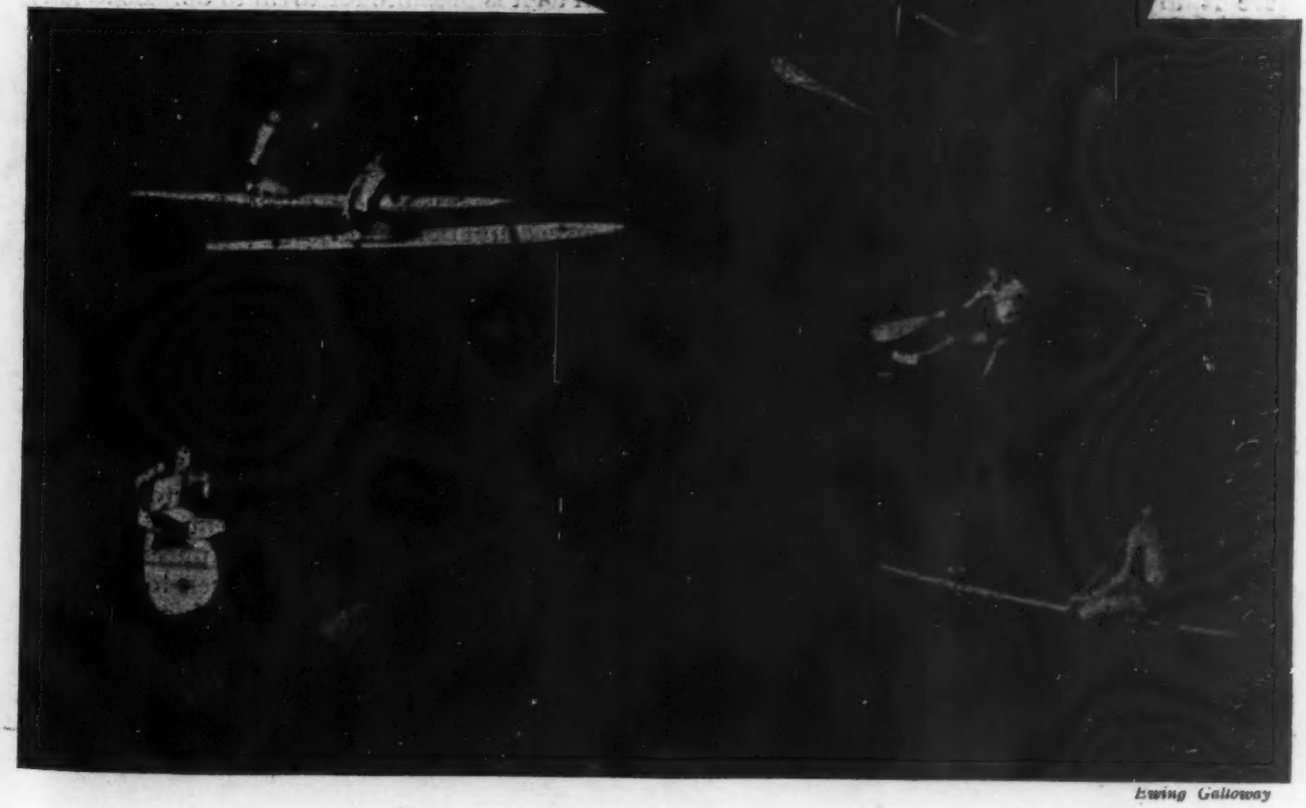
sore arms that many camp directors hesitate to assume this duty. All campers should receive this typhoid protection well in advance of the vacation season.

It is customary for parents to be asked to fill out a health questionnaire preliminary to the opening of camp. This is sometimes looked on as a matter of routine and as such is made out in a perfunctory manner. If such a questionnaire is worth bothering with at all, it is worth filling out conscientiously. In it information is requested that may be of great value to the physician or the nurse. Wise parents will make it a duty of first importance to see that it is properly filled out and promptly sent in.

Another matter of the greatest importance, which is often slighted or given only the most cursory attention, is the preliminary health examination. The camper's physician is asked to fill out this record; and it can be of the utmost value, or utterly worthless, according to whether it is filled out with intelligence and care or is made a mere form.

The sensible parent will accompany his child to the doctor's office and ask that the examination form be made the subject of an office

ACTIVITY AND PREOCCUPATION WITH INTERESTING WORK AND PLAY AFFORD THE BEST CURE FOR HOMESICKNESS.



OUTDOOR EXERCISE IN THE FORM OF RECREATION WILL PERFORM WONDERS WITH CAPRICIOUS APPETITES AND CONDITIONS OF WEIGHT.

Ewing Galloway

call, to be paid for at regular office rates. Many physicians are willing to go through a superficial testing of the heart and lungs and a sketchy examinationn of the throat, sufficient to justify them in filling out a routine blank, without making any charge for it. Such examinations however are not worth much more than their cost! A thorough checkup by one's family physician once a year can well be made a justifiable expenditure as a preventive health measure.

Many camps ask that just before the child leaves for camp another blank be filled out by a physician in which he states that to the best of his knowledge there has been no exposure to contagious disease within a given number of days. This may seem a mere form; but to any one who has once seen contagious disease break out in camp and effectually spoil the summer vacation for a hundred or so persons, it will be recognized as a measure that is well worth while. Parents should be frank and honest about giving the physician all the information they have on this point.

Aside from these preliminary examinations, most camps expect to have every camper gone over carefully by the camp physician within a few days of his arrival in a complete physical examination. This will include weighing and measuring and some estimation of what he should weigh—approximately, of course, in view of differing types and racial stocks represented in our American melting pot.

This examination, taken in connection with the report of the family physician and the health questionnaire, will determine whether there is to be any limitation of the camper's activities and whether any other exception to the general camp routine is to be made in his case. Any food idiosyncrasies in allergic youngsters had best be noted at this time and called to the attention of both cabin counselor and dietitian if not mentioned in the health questionnaire.

One of the great benefits that a good camp can confer on the boys or girls who attend it consists of the correction of capricious appetites and the building up of strong bodies, together with the addition of desired weight by those who weigh less than what they ought to weigh. This is possible as a rule, if the balanced diet provided by the dietitian is adhered to. The outdoor exercise, the preoccupation with interesting pursuits instead of the haggling over food intake that is the usual custom in so many homes and the elimination of candies and drug store drinks as between meal eating and drinking make such gain by underweight children the rule rather than the exception.

One of the most potent factors in this increase in appetite is the elimination of an overabundance of sweets. Strange as it may seem, however, the very parents who profess themselves the most anxious to have their children gain healthy appetites and attain proper weight are frequently the ones who stand in the way of such improvement through the silly custom of sending candy and cake to be eaten in camp.

Directors tell me that this is one of the most annoying problems with which they have to deal. Some directors overlook the breach of camp regulations involved; others confiscate any boxes sent in and thereby run the risk of offending the friends who have sent them, while still others minimize the harm done to one child by insisting that such gifts be shared, either with the camper's shack or table mates or else with the whole camp.

It would seem only fair that the camp demand a finer spirit of cooperation with what it is trying to do than is manifested by parents who thus nullify the good effects it is trying to put across. In fact, camp directors as well as school heads and even, in moments of candor, the offending parents themselves have told me that it is not unusual for such contraband sweets to be smuggled to children in packages of clothing or wrapped in packages designed to conceal the fact that they contain forbidden food. Parents who thus flout the authority of director and counselors have no justification for surprise when unpleasant disciplinary situations arise, for they have done their best to undermine and belittle those whom they are holding accountable for their children's safe and healthful summer.

Another bit of cooperation that the camp may justifiably and profitably demand of parents is that they stay away from camp themselves as much as it is possible for them to do. Especially is this desirable at the beginning of the season, when some children are inclined to homesickness. Directors and counselors alike dread the protracted "hanging around" by parents who "just want to wait until my boy (or girl) gets over the first attack of homesickness!"

Homesickness is best cured by activity and by preoccupation with interesting work and play. It is rarely or never helped by having a parent glooming about and watching nervously for signs of improvement. A similar situation is frequently created by parents who engage quarters in a neighboring village or town and then constantly visit their children "to see how they are getting along." Some camps try to minimize the bad effects of this disturbing influence by limiting visits from parents to one afternoon a week or even less frequent "visiting days." It does seem as though parents should be willing to entrust their children to the camp personnel without making the task of providing a happy summer an impossible accomplishment.

Next to the arrival of visiting day, directors and counselors tell me that they dread mail delivery for children who are inclined to be even the least bit home- *(Continued on page 657)*

Sun Goggles

***Old as the sun in principle but new as tomorrow's sunrise in color and composition, they serve as protectors for the eyes in work and in play, says* META ROSENTHAL**

Seibelman

AS FAR BACK AS 2283 B. C., a Chinese emperor, we are told, gazed at the stars and watched the flight of birds through amethyst and topaz lenses. He had discovered that a convex lens magnified an object and that color diminished the glare from the sun. The story is not substantiated by ancient scholars of the orient, however, so it probably emanates from the same source as the myth which attributes the origin of spectacles to Chŏ Tso, a "worthy genius" who supposedly had supernatural powers.

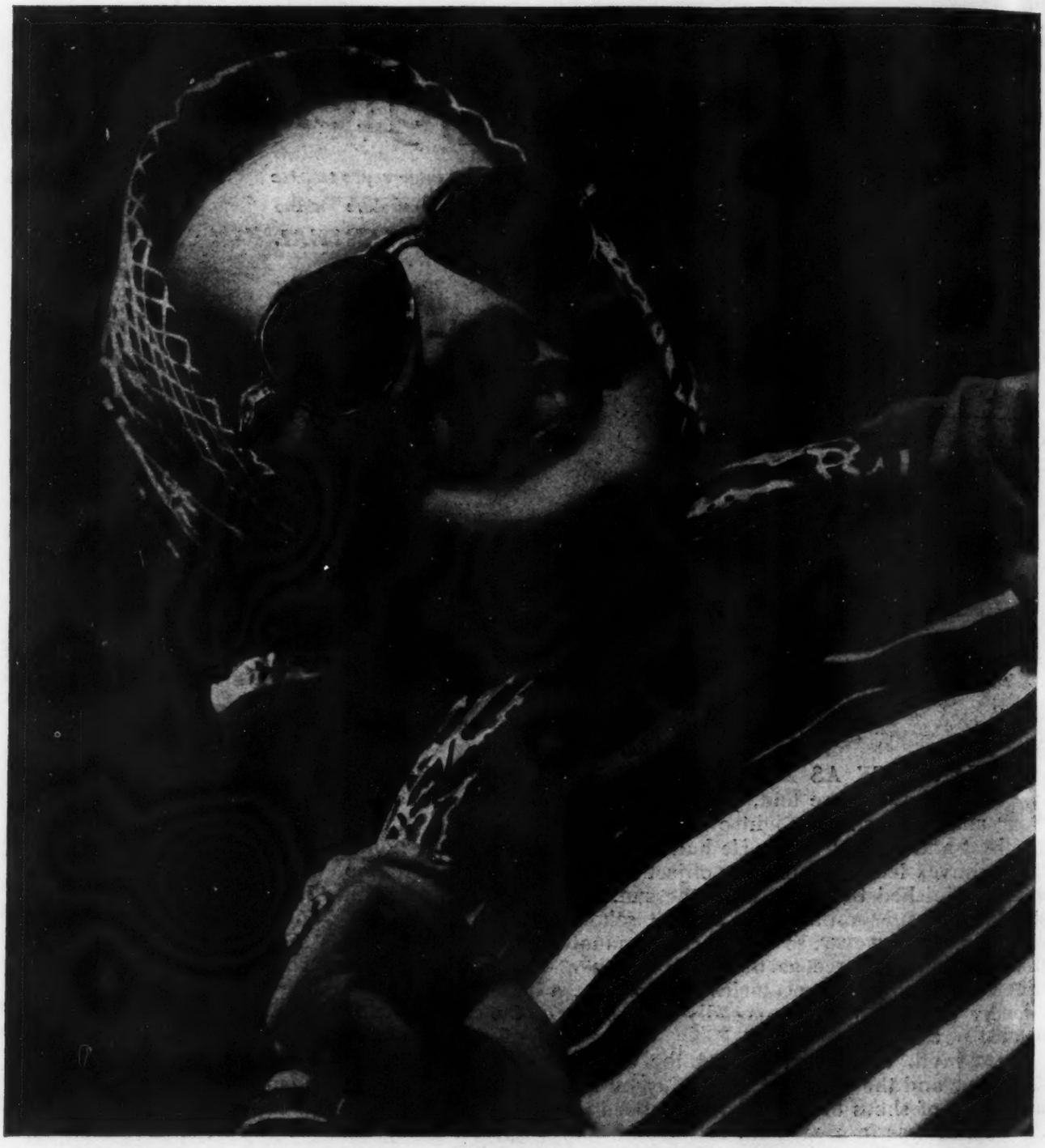
From myth to half-truth, and the story of Confucius and the cobbler. Confucius, on leaving a pair of shoes to be repaired, noticed that the cobbler was in great pain because of badly inflamed eyes. Inquiring into the cause of the condition, he was told that the man and his wife had quarreled that morning and that in a fit of bad temper the latter had thrown red pepper into her husband's eyes. Confucius thereupon ordered him to wear colored glasses, which in ancient times were accredited with possessing therapeutic properties.

Now it happened that the cobbler also had a squint in his left eye. But behold! When the eye was rid of the inflammation the squint was gone too. This made for wailing and lamenting on the part of the wife for in her opinion her husband's good looks had been ruined; and furthermore, what she had feared, she now knew to be a fact—that the devil inhabited his soul. . Undoubtedly the glasses did assist in effecting a cure—only, however, by shutting out the bright light, which would have occasioned further irritation. As for correcting the squint —that sorcery must have dwelt within the wife's own eye.

History concedes that for many hundreds of years the Chinese used a clear mineral, called Tcha Chi, or "tea stone," because it resembled the color of weakly steeped tea, for the purpose of reducing glare; and it accepts as authentic the statement that Nero watched gladiatorial combats through an emerald.

Subsequently there are no records of colored glasses being used as glare reducing mediums until the sixteenth century, about three hundred years after an English Franciscan, Roger Bacon, had discovered the "science of lenses." At that time, green lenses were recommended for eyes sensitive to strong light. It is surmised that green was chosen because of the restful reaction one experiences from looking at trees and grass. About a hundred years later, blue glasses were prescribed, but with no recorded reason for the change of color.

It was at the end of the seventeenth century, too, that Sir Isaac Newton made the famous discovery that if he passed a beam of light through a glass prism, it was not only refracted but separated into colors as well—red, orange,



FRAMES AND LENSES WILL BE GAYER THAN EVER, TO MATCH THE MOODS OF STRIPES IN SWEATERS AND PATTERNS IN KERCHIEFS.

yellow, green, blue, indigo and violet. The division was arbitrary, except for the fact that every combination of any two adjacent colors could be found between them, as for instance all shades of yellow-green or blue-green. When he passed these colors through an oppositely placed prism, they became reunited into white. He called this band of color the spectrum. Later it received the name of the visible spectrum, because it is that portion of the entire spectrum, or band of radiant energy, that is converted into sensations of sight and color as it falls on the retina of the eye, each wavelength of light representing a different color.

The full spectrum extends from the "bundle" of cosmic, gamma and x-rays, or short wavelengths, the shortest of which is one-ten million millionth of a centimeter in length, to the long, or radio and other wireless communication wavelengths, the longest of which stretches to eighteen miles. The light rays that produce the sensation of violet are about $\frac{1}{67,000}$ inch long; those which create the sensation of red are about $\frac{1}{250,000}$ inch. The visible

spectrum occupies the minute space of about one "octave" in the entire band of radiation, in which seventy octaves have been identified. Beyond the violet are the ultraviolet rays; beyond the red are the infra-red rays. Although neither ultraviolet nor infra-red rays are visible to the normal eye, scientific speculation assumed that under conditions of intense radiation they nevertheless would affect the eye in one way or another. Certain investigators asserted they would induce pathologic conditions. Other scientists believed that since the eye in its evolutionary process through millions of years had become accustomed to varying intensities of sunlight, it would be neither benefited nor harmed when subjected to excessive radiation. Research on the part of still others convinced them that the action of ultraviolet rays, at least, should be definitely beneficial to the eye; so when in 1876, after five years of experimental work on his farm near Philadelphia, General Pleasanton published his conclusions that the "influence of the blue ray of sunlight in developing animal and vegetable life" was "stimulating and healthy," those who held the same opinion concerning the effect of the ultraviolet ray on the eye believed their theory had been proved scientifically sound; and for the time being it was generally accepted. A second time the blue glass, which had a high transparency for ultraviolet and which had practically been discarded for amber and smoke, claimed precedence over other lenses as a glare reducing medium. (This article will not enter into the discussion of colored glasses from the standpoint of their therapeutic value.)

Soon, however, the controversy flared up again. In 1880, Dr. Fieuzel of Paris combined certain chemicals with the ingredients of glass and developed a formula for producing a yellow-green lens that absorbed ultraviolet radiation.

In 1885, Dr. William Thompson, an ophthalmologist of Philadelphia, who remained neutral in the controversy, prescribed lenses with an amethyst tint for reduction of glare only. Amethyst colored glass was difficult to obtain, so opticians ground their lenses out of old window panes that had turned amethyst from long exposure to sunlight.

In the meantime, investigation was proving conclusively that the action of ultraviolet is insidious because the effect, conjunctivitis, doesn't develop until about five or six hours after exposure. During this period, many colored glasses appeared on the market. Due, however, to imperfect knowledge of ophthalmic glassmaking and to a lack of precision instruments, few of them accomplished much in controlling the absorption of radiation.

In 1909 the Royal Society of London, in connection with the Glass Workers Cataract Committee, engaged the services of Sir Isaac Crookes to experiment on the effect of adding various metallic oxides to the ingredients of glass in order to absorb both ultraviolet and infra-red rays from heated molten glass. It had been discovered that the action of infra-red is thermal, creating an instantaneous burning sensation when experienced in extreme radiation; and since these rays were present in the radiation from heated molten glass in far greater abundance than ultraviolet rays, it was inferred that they, principally, were responsible for the development of a type of cataract peculiar to glass blowers.

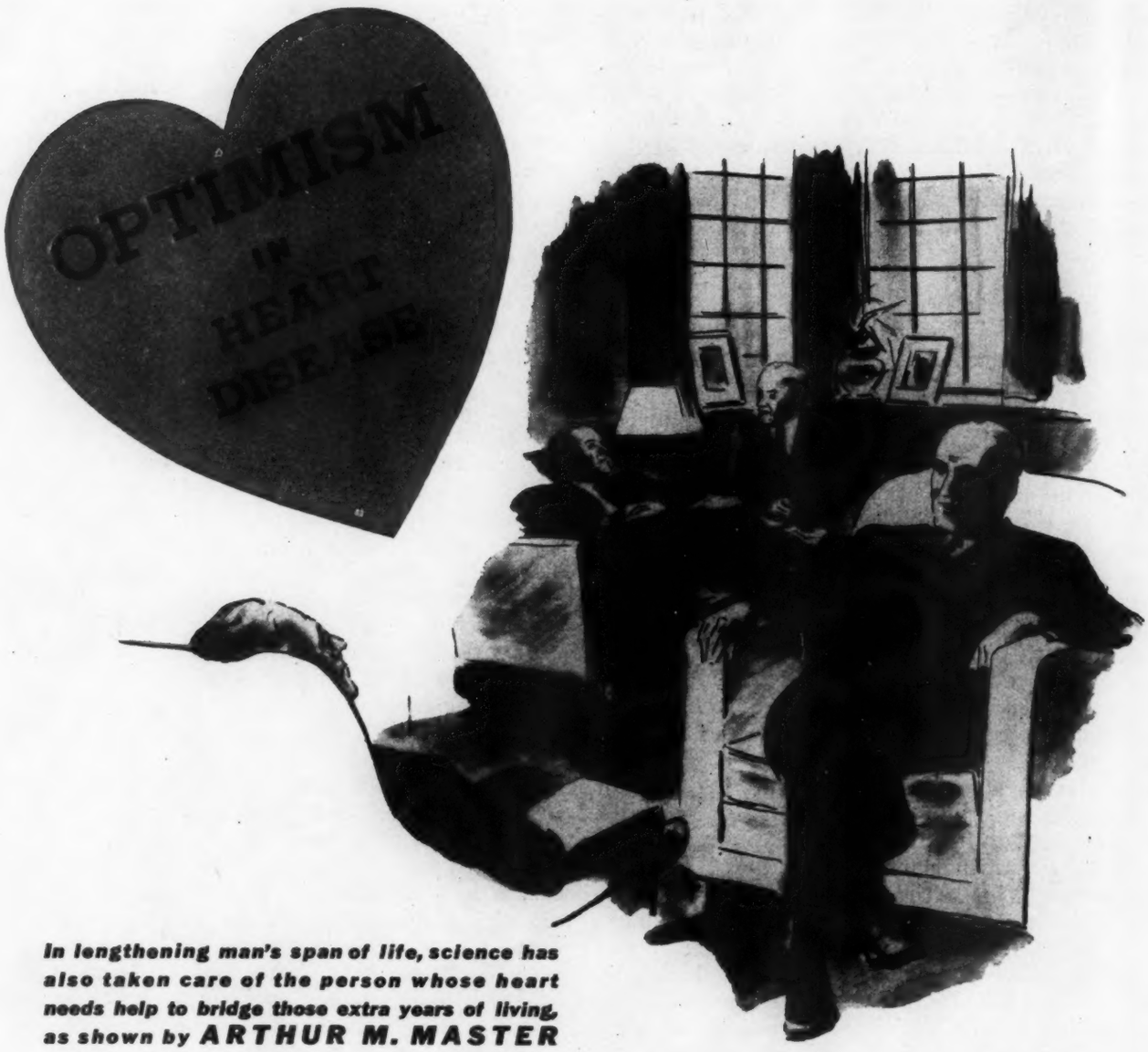
After six years of experimentation with such metals as cerium, chromium, cobalt, iron, manganese and uranium, Sir Isaac Crookes produced a sage-green glass, which eliminated a considerable amount of both rays.

Subsequently there developed four shades of "Crookes' " lenses, ranging from a dark grayish smoke color, almost black, to one only a little darker than a white lens. All of them, whether embodying optical prescriptions or in "plano" form, enjoyed great popularity. Ophthalmologists prescribed the dark shades for the protection of eyes in industrial work. The slightly tinted one was recommended to persons whose eyes were oversensitive to the glare from ordinary sunlight and artificial light.

Sir Isaac Crookes had achieved a new high in the art of ophthalmic glassmaking. He was the first scientist to engage systematically in eliminating infra-red rays; the first to produce lenses having selective and various degrees of absorption, thereby protecting the eyes of workers from specific injurious radiation encountered in their jobs. And he produced a lens which was a cosmetic triumph in color and which altered to only a slight degree the color of objects seen through it.

In 1915, or therabouts, our Navy department called on the Bureau of Standards to assist in formulating specifications for more adequate protection for the eyes of industrial workers than even Crookes' lenses afforded. This action stimulated manufacturers of ophthalmic glass to renewed effort, and there swept down on the market a second avalanche of colored glasses. Many of them failed to meet the stringent federal requirements and soon were discarded. Yet within the short time of a decade, lenses were produced in which the absorption of ultraviolet and infra-red was so great that the process of excluding them ceased to be a problem.

However, the problem of selective spectral transmission was still baffling. In furnace work, arc and electric welding and kindred trades, shutting out injurious radiation was the paramount need; whereas in flying, for instance, it was imperative that an aviator be provided also with the maximum amount of light-giving rays, so that he might see *(Continued on page 656)*



In lengthening man's span of life, science has also taken care of the person whose heart needs help to bridge those extra years of living, as shown by **ARTHUR M. MASTER**

ONE CANNOT pick up a newspaper without being impressed by the large number of deaths caused by heart diseases, a far greater number than that caused by cancer, pneumonia or tuberculosis. The reader may be not only impressed but overawed and disturbed. And a fear is instilled that he himself may die suddenly of an unsuspected heart condition.

Analysis of the statistics quoted in the newspapers, magazines, medical journals and medical talks will make evident that the increase in heart disease is only apparent and, more important, it will show that the advance in knowledge and in the methods of treatment have greatly benefited the individual with a heart ailment.

Nearly 2 million people in this country suffer from heart disease, and each year there are 300,000 deaths from it. The death rate has risen from 124 per hundred thousand in 1920 to 224 in 1932, a rate twice as high as that from cancer, its nearest rival. However, when one begins to examine the facts underlying this increase in heart diseases one finds reason for encouragement rather than pessimism. An understanding of the significance of these facts will lessen the panic which now overtakes many when they are told that they or a member of their family have heart disease. It will counteract the fatalistic attitude which causes others to neglect necessary precautions and procedures.

Today, people live at least ten years longer than they did a generation ago and nearly thirty years longer than in the days of George Washington. The average duration of life today is sixty years. Studies have shown that the increase in deaths from heart disease results from the increase in longevity of the population, from the fall in infant mortality rate and from

the fall in infectious diseases. Deaths from smallpox, diphtheria, scarlet fever and tuberculosis have decreased. The mortality rate of heart disease is also increased by the addition of deaths formerly ascribed to other causes. With a more accurate nomenclature of disease, deaths formerly listed as "senility," "apoplexy" and "Bright's disease" are now usually classed as heart disease. The increase in heart disease, therefore, is more apparent than real and should not be a cause for alarm. Rather is there cause for congratulation that the span of life is longer and that there are fewer deaths from infectious diseases. If we do not die from other diseases we must die of hardening of the arteries; otherwise, we would be immortal.

It is frequently stated that the rapid tempo and the stress and strain of modern life produce heart disease. This is doubtful, although definite proof against this theory is not available at present. Surely, there was just as much stress and strain in ancient times, during the dark ages, in the days of the plagues, the great fires, serfdom and the French Revolution.

Heart diseases are of many different kinds, the point in common being that the heart is disabled. The greatest advance in this generation and the one that holds out hope for the development of improved methods of treatment is the clear differentiation of heart disease into types.

Rheumatic heart disease is the type most common under the age of 40 years, and it comprises about 25 per cent of the total number of cases. Since in most instances it begins between the ages of 5 and 15, and since children require care adapted to the degree of disability, it is especially important to parents, teachers and social workers. It is the first cause of death among school girls in New York City; it is second only to accidents among school boys. It results from rheumatic fever, repeated attacks of which are likely to increase the damage to the heart.

The cause or causes of rheumatic fever are unknown, and therefore no positive means of prevention can be suggested. The disease is more frequent in crowded communities and in climates like New York. It is more common among the poor; it frequently attacks more than one member of a family, and one attack seems to predispose to others. Fresh attacks frequently follow tonsillitis and colds. Although it has not been proved, there is little doubt that rheumatic fever is infectious. The entire family group should therefore be examined following the discovery of one case of rheumatic fever. Those responsible for children, especially children who have had rheumatic fever and in whose families there is rheumatic fever, should secure immediate medical advice when these children become pale and weak, tire easily, perhaps lose weight, have pains in the joints and do not sleep well. The future of the individual case depends on early discovery and, if the heart has been injured, on proper medical care including rest in bed for long periods, on protection from illnesses known to lead to successive attacks and on favorable home environment and good general hygiene.

Arteriosclerotic heart disease, or hardening of the arteries, includes about 40 per cent of the total cases of heart disease. It usually begins after 40 years of age. Prolongation of life depends on early diagnosis and on the patient's learning to live within the capacity of his heart. With guidance these patients can live rich and varied lives. But it must be a life without hurry. Workers in heavy manual occupations must, of course, change their work; factory workers can usually carry on, if they can spare themselves in their travel to and from work.

Simple procedures, such as keeping in bed the patient who has had a severe heart attack, for example, coronary artery thrombosis, or prescribing sedatives rather than powerful stimulants, have increased the number of survivors in an illness which affects thousands of individuals every year. In the past this severe heart attack was not recognized at all or was mistaken for acute indigestion.

Angina pectoris, which is also a form of hardening of the arteries, can now be controlled so that the patients go on leading useful lives for years. In fact, if they keep within the limits of their reserve they not only get along well but have few complaints.

The term "angina pectoris" imparts unnecessary fear in the mind of the patient. Angina pectoris means pain in the chest, and even when this pain is produced by heart disease there

THE CURE FOR STRAIN ON THE CIRCULATORY SYSTEM WHEN OCCASIONED BY OVERWEIGHT IS OBVIOUSLY CAREFUL LOSS OF WEIGHT UNDER THE DOCTOR'S DIRECTION.

are all degrees of severity. Heart specialists know that the majority of these patients carry on their usual occupations. A man who had a serious heart attack, a coronary artery thrombosis, at the age of 67 years, not only lived seventeen years thereafter but led an unusually active physical existence. Although strenuous physical effort was probably not advised, this man's history certainly illustrates an optimistic side of heart disease. Yet, unfortunately, many persons still retain a completely exaggerated conception of angina pectoris. Perhaps this can best be realized by quoting from an article on this subject which appeared in a popular magazine:

> When a robust man suddenly drops dead and the newspapers report heart failure, the probability is that he died during an attack of angina pectoris. If he had gone to his doctor the day before, the doctor would probably have slapped him on the back and told him that his heart was as sound as a dollar. The pain of angina pectoris is the most agonizing that a human being ever feels—many victims die during their first attack of angina pectoris.

The foregoing is a complete exaggeration, but it is important because it is the conception of heart disease held by many laymen. The facts are much more encouraging. When one investigates this type of "sudden" death one almost invariably finds that the patient has had long-standing heart disease. In many cases, too, the patient has paid no attention to the advice of his physician. Furthermore, the description of the pain in angina pectoris as being the "most agonizing" has not been true for years. The condition is now so easily recognized that diagnosis is made early, before severe pain can set in.

The treatment of the heart conditions caused by hardening of the arteries is simple. By the use of procedures such as adequate rest and sleep and proper care of the stomach and intestines, lives may be comfortably prolonged. Small meals of simple digestible food, well chewed, are essential. Overindulgence in tobacco and alcohol must be avoided. A good philosophic attitude, from both the mental and the physical aspects, is helpful. The man who knows he is limited by heart disease and appreciates this disability may actually live longer and more happily than the normal person who does not take care of himself.

The cause of hypertension, or high blood pressure, is unknown. Experience with this condition is growing by leaps and bounds, although the blood pressure apparatus is of relatively recent origin. Patients with high blood pressure live ten, fifteen, twenty, twenty-five or more years, and they usually lead normal lives by following simple logical rules of health.

Syphilitic heart disease, which makes up from 5 to 10 per cent of the total, can be prevented only by preventing and treating the syphilitic infection itself. About twenty years elapse between infection by the disease and the diagnosis of the heart involvement. Free discussion and vigorous attacks on this disease are essential to prevent involvement of the heart. The public must be taught that the word "syphilis" is not tabu, that the term should be used freely. When people adopt this attitude it will be easy to eradicate this form of heart disease because the victim will receive treatment in the early stages. Not only will from 5 to 10 per cent of the cases of cardiac disease be prevented, but the other manifestations of this scourge will be eradicated.

Heart disease caused by thyroid trouble can be controlled. By removing the cause, that is, by operative removal of the thyroid gland, the heart disease may be alleviated or entirely prevented. The operation in the hands of the modern surgeon carries practically no danger.

Seventy per cent of the people who are really overweight have high blood pressure. Marked overweight is a definite strain on the circulatory system. The cure for this is obvious—loss of weight under the physician's direction.

In the last two decades advancing knowledge has entirely changed the outlook concerning heart diseases. Only a few years ago, doctors were discouraged from specializing in this field because the patient was considered to have a hopeless future. It has been shown, however, that the increased prevalence of heart diseases is due above all to the fact that the life span has been lengthened. Since diphtheria, smallpox, typhoid and tuberculosis are much less common than formerly, man lives to an older age, when heart disease naturally is more prevalent. Finally, many illnesses formerly considered to be diseases of other organs are now properly grouped among the heart diseases.

Tremendous progress has been made in the outlook of heart diseases by innovations in treatment. In this respect the mercury drugs may be mentioned. These have proved so effective in the alleviation of dropsy that the present-day medical student sees little of swelling of the feet and ankles, whereas up to ten years ago the hospitals were crowded with patients with heart disease and severe dropsy.

Until a short time ago many cases of heart disease were not recognized as such. Not only has this changed, but discovery of the disease is made much earlier than before. Periodic health examinations have been an important factor here.

All these facts then make it evident that real progress has been made not only in the discovery of heart diseases but in their treatment. Where there is complete cooperation between the patient and the doctor the outlook in heart disease is indeed an optimistic one.

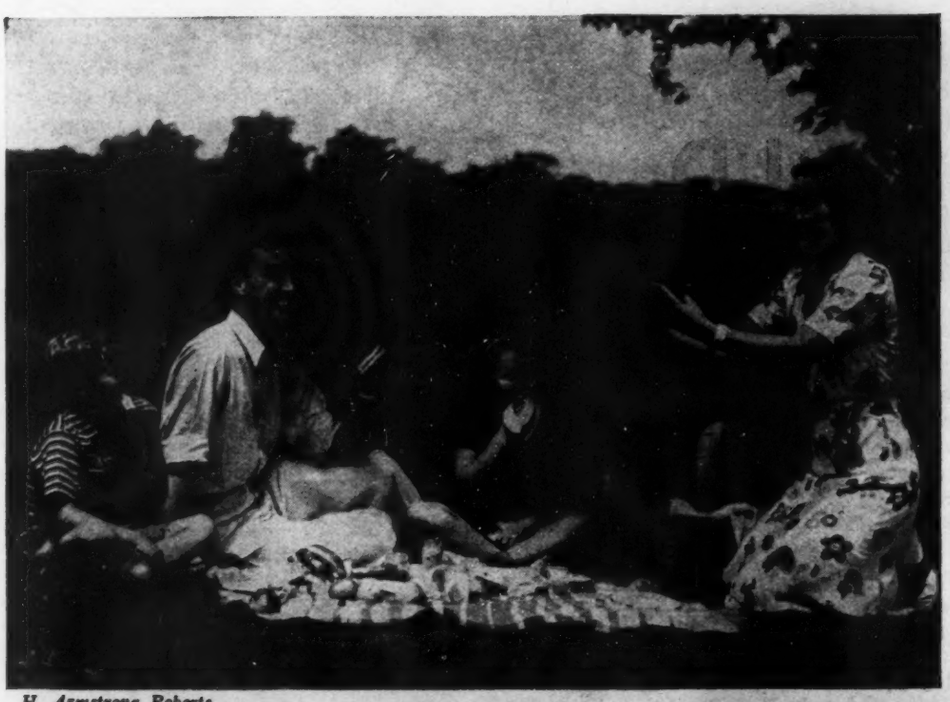
HOT and COLD

THE HUMAN BEING has a normal temperature of 98.6 F. That temperature is maintained in cold weather by wearing extra clothing and in hot weather by permitting plenty of evaporation of water from the surface of the body. To aid in such evaporation, it is necessary to have clothing that is suited to the weather. On the right is a three piece sport dress, cool and comfortable. The scoop hat is crownless and ties in the back.

IN THE TROPICS both men and women know how to keep cool with loose, easily removable clothing. They select colors and materials which aid most in avoiding the burning effects of the tropical sun.

Acme

By Burton Holmes from Ewing Galloway



H. Armstrong Roberts

WHEN SUMMERTIME comes, picnicking is the order of the day, but many an illness is caused by sitting uncomfortably on damp ground.

Studio Deutch

THE DIET in the summer may be low in calories, as we do not eat to maintain body heat. Salads and fruit are dietary mainstays.

Studio Deutch

BECAUSE we lose salt from our bodies by perspiration, the worker adds salt tablets to the drinking water, thus avoiding heat stroke.

COOLING DRINKS in the summer season do not necessarily imply large amounts of sweetening or alcohol. Citrus drinks of the orange, lemon and lime add vitamin C, and cold tomato juice is another excellent beverage. Iced coffee and iced tea have virtues of repute.

Black Box Studios

THE CHAMPION—trained-to-the-minute — can indulge in strenuous exercise even in the warmest weather, but unless you are in training, light exercise suited to the body and your health is preferable. This player is Mrs. John Van Ryn, member of the American Wightman cup team.

EXCESSIVE COOLING of the body by direct draft of an electric fan is harmful to health. The oscillating fan which keeps the air of the room in motion is best.

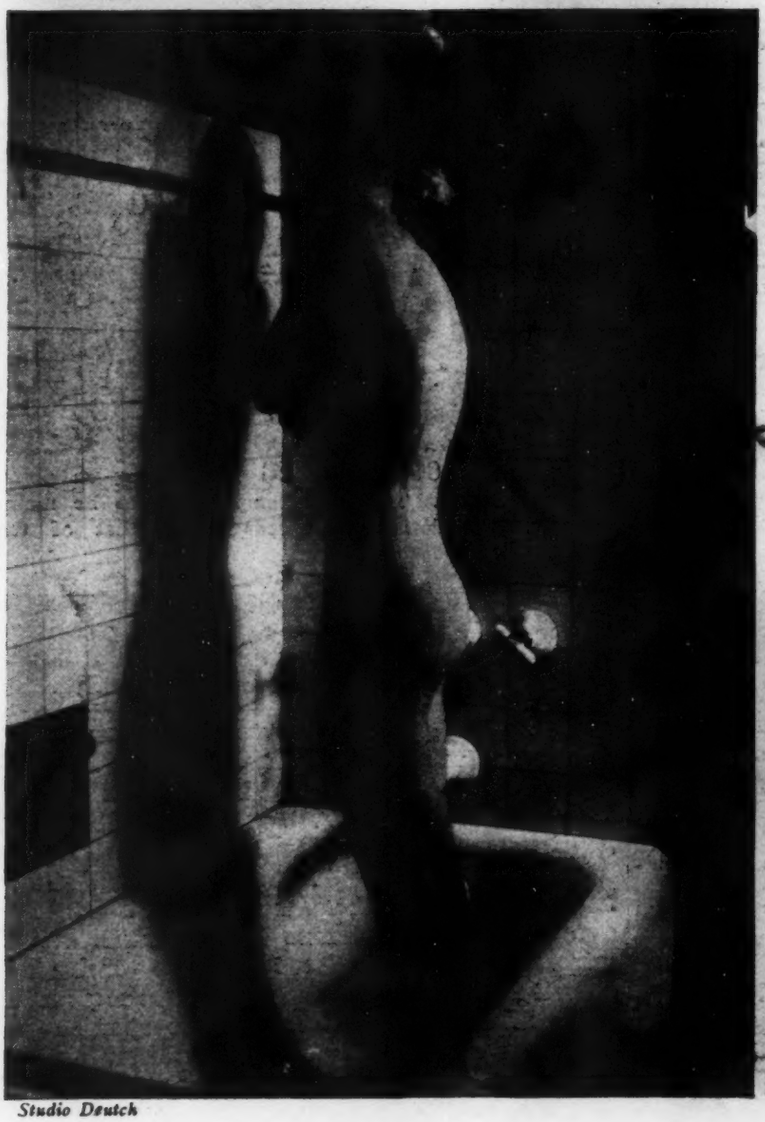
Harold M Lambert

AIR CONDITIONING is gaining in popularity. The best temperature to be maintained is 10 degrees below that of the outside atmosphere.

Ewing Galloway

Carl Berger

THE GREAT SUN GOD is being worshiped again, but sun has potentialities for harm as well as good. It is best to begin with a small amount each day until the skin is tanned, then the exposure may be increased to a longer time.



Studio Deutch

FREQUENT BATHING in the warm season helps to keep the body cool and refreshed. The shower bath does not have the sedative and weakening effects of the long tub bath.

SOME PEOPLE think that cooling the wrists will cool all the body. That is only because in the wrist the blood vessels are near the surface. But a wrist wash will not take the place of a cooling shower.

Studio Deutch

Warren Boyer

THE OLD SWIMMING HOLE can never be replaced by any modern mechanical contrivance, but nowadays we make certain that the water is pure and free from contamination.

Ewing Galloway

WATER is water everywhere. In the congested areas of the cities the fire department helps the children of the tenements to keep cool by improvising street showers.

Ewing Galloway

AND HERE is the apotheosis of the modern swimming pool, chlorinated, clean and under control.

IN SPITE OF THE FAD OF TAKING CALISTHENICS IMMEDIATELY AFTER RISING, THAT IS NOT A GOOD TIME, AS THE VITALITY IS AT A LOW EBB THEN.

EXERCISE

DUDLEY B. REED *now tells when to take it and when to stop it, in part 4 of his series*

IN THE FOREGOING chapters an attempt has been made to cover the "why" of physical exercise, to present the case for some of it among adults and to distinguish somewhat among different types. A bit of attention may be given now to those other interrogatives, "when" and "how much."

Approaching the former from the rear, when should a person not exercise? Well, for one thing he should not take vigorous exercise within perhaps two hours after a meal, that is an ordinary or full meal, for successful exercise as well as successful digestion makes a demand for extra blood, and the combined demands at the same time mean lack of success for one activity or the other. In reply to this it might be urged that digestion, complete digestion, of a meal requires many hours and that exercise taken five hours after a meal will still find the digestive apparatus on the job. In rebuttal the only points that seem to be at hand are, first, that stomach digestion does not normally take so long and, second, that experience on the part of many thousands of athletes and others appears to show that discomfort, weakness or even faintness may accompany vigorous exercise soon after a meal but are less apt to do so three hours after a meal.

Experience also seems to show something on the other side of the question. The feeling of weariness which may come to those who are indulging in long, hard exercise not of a speed character, such as mountain climbing, may be relieved by eating a small amount of something. Probably a full meal would not have quite the same effect.

In spite of the fad existent some years ago of taking calisthenic exercises immediately after rising, that is not a good time, since the vitality as shown by such things as body temperature and blood pressure is at a low ebb then.

Nor is it well to take vigorous exercise just before going to bed, since sleep is wooed most effectively when the circulation is not stimulated and the blood pressure is not raised. If the circulation is active when a person retires, the brain receives a good supply of blood, and this stimulates activity of thought. Such activity is inimical to sleep.

Recreative exercise should not, of course, be taken when one is ill or muscularly tired or suffering from some injury which is likely to be made worse by such activity. Under such circumstances it may do more harm than good physiologically and is pretty certain to do so psychologically, since illness and fatigue are not conducive to enjoyment of exercise or to the satisfactory performance which is often a part of enjoyment.

For most persons occupied with a profession or business the best time of the day for recreation is late afternoon, finishing the activity preferably an hour before dinner. Particularly is this a good time if there is to be work of an intellectual character in the evening. The recreation then provides a break between two sessions of mental exertion. When the day's work is done it is easier to relax and enjoy to the full something of a recreative character.

A most desirable time for this type of recreation is when the potential exerciser is nervously tired. Many a man, at the close of a particularly trying day, feels too tired to do anything but throw himself down on a couch and wait for the night. But if his weariness is from nervous work, many a man has found that physical recreation removes his fatigue and makes a new man of him for the evening. This will not be the case if the fatigue is muscular. Naturally this matter of being a new man for the evening has its marital and social implications.

The most important time of all for the busy man to take recreative exercise is when he has no time for it. If he is so driven by this and that that he doesn't have a minute for such unnecessary fol-de-rol it is almost essential that he take the time if he wishes his next day's and his next week's work to be efficient. The man who has plenty of time for recreation has no great need of it. What he probably needs is a little work. That would be the real change for him. It is the busy man, not the idler, who secures change and relaxation in this way. If there are differences in the pressure of work on him he may omit his recreation when his work is light, but he must put it in when work is heavy.

Ideally such recreation would be a part of each day's schedule. To many this will seem out of the question, and I am willing to compromise with them on three days a week, provided that they will give an occasional thought to how wonderfully fit they would feel if they had an hour of it daily.

How much to exercise is a question which no man can answer accurately for persons in good health. An approximate answer can be given for one who is recovering from a severe illness or for one who, because of some infirmity, is equipped to exercise but little. But shall the healthy man take 10,000 or 60,000 foot-pounds of exercise a day? From the point of view of physical fitness merely, it would undoubtedly be well for him to take mild exercise for many hours a day, but if he does that and is not a man of independent means, who will pay the landlord and the grocer? The real question arises in the cases of those who pay for the services of these providers of shelter and food not by the sweat of their brows but by what goes on behind their brows. What is the optimum amount of exercise for the white collar or intellectual worker in order that he may maintain his health and achieve the greatest output? No one living, not even the doctor, can give an accurate answer to this question.

At this point it may be opportune for me to share a suspicion which has been developing in my mind, lo, these many years, a suspicion which may be shattering to tradition, disloyal to my colleagues and astounding to many an intelligent person. Simply and clearly stated it is merely this: A doctor does not know everything. Perhaps he does not know even as much as he would like to have you think he knows. (I am now speaking of doctors of medicine, not of doctors of philosophy although I have convictions about the latter.)

If you are disposed not to give credence to this epochal suspicion let me suggest that you ask your doctor one or two very simple questions with regard to the human body on which he is by way of being an authority. First, slip up on him in an unguarded moment and ask him how the tongue, hitherto clean, becomes coated within a few hours after the beginning of an attack of indigestion or an acute febrile disease. Mind you I am not talking about the composition of that coating. He can tell you that. It consists of food remnants, bacteria and cellular detritus. I am talking about the physiologic or pathologic process by which this coating comes into being so rapidly at such times.

If he goes to the head of the class on that one, ask him why, although all the other dislocations to which the human frame is heir are more frequent in males, dislocation of the lower jaw is more frequent in females. If he looks in his books he will find these statistics there set down; but his answer will depend on whether or not he is married and on the lowness of his sense of humor; and it won't be a satisfactory answer, no matter how ribald.

Yet even though the doctor doesn't know everything he doesn't stand alone. He is joined by the lawyer, the merchant prince, the scientist and the banker on whom we looked as the *summum bonum* and *ne plus ultra* before the late financial unpleasantness. Unless he was exceptionally endowed with stupidity at birth, his years of study and experience as medical student, intern and practitioner make him the best authority available on matters relating to the human body and, to some extent, the human mind and emotions. If he was so endowed at birth he couldn't get through medical school, and consequently I nominate him as the best person to consult about how much exercise you may take with safety.

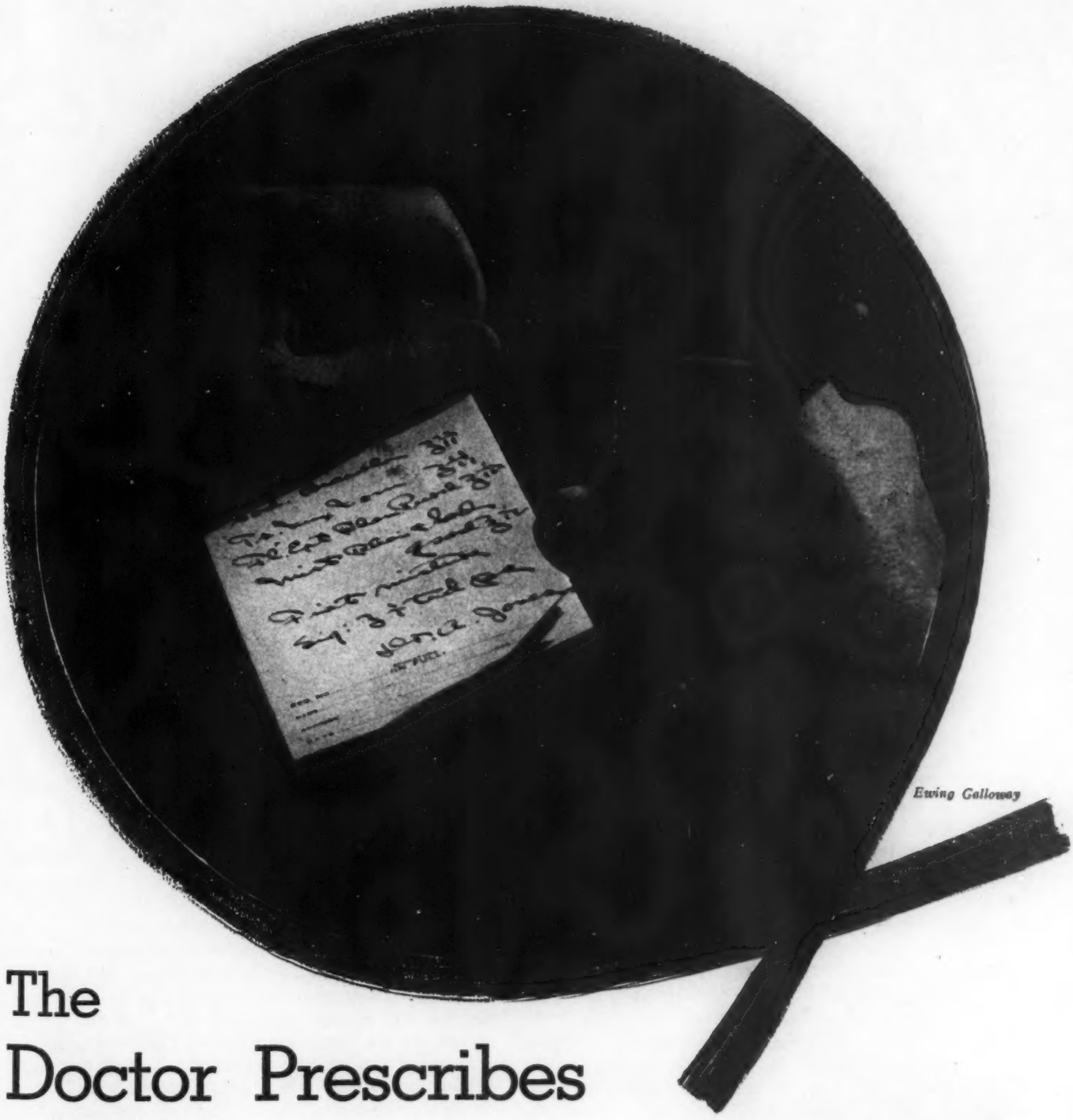
At the risk of vain repetitions such as the heathen use, it should be said most emphatically that a good examination by your doctor each year during middle life should be a preliminary to embarking on a program of exercise. Within broad limits he can tell you how much to take. Of course, in these days when socialized medicine and other hobgoblins are casting their shadows on our fair land, this may seem merely like doctors hanging together; but the meeting is open for nominations of other experts who may be better qualified. I know of none. It might be added that, having spent the time and money to secure the doctor's opinion, it would be the part of wisdom to follow his advice and not to take more exercise than he recommends.

Listen to the story of Brutus Dalrymple, of course a fiction since no parent with that surname would call his son Brutus any more than he would Judas. In college, Brutus was an all around athlete, being on the football, basketball and track teams, where he did his bit for the glory of the old Alma Mater and the building up of a reputation on which the heir of the Dalrymples could get a good job with one of the fraternity brethren after graduation. He secured the job in a brokerage house and made good, since he had more than athletic stuff in him; but he had to work hard to keep abreast, or even within sight, of his ambitions. He had married and had two youngsters for whom he must provide; and so, altogether, he had no time for exercise during the next ten years and had lost the habit so much that he took none during the following five years although he tried to see the old team play once or twice in the autumn.

It chanced that one of his old college friends breezed in one day, had lunch with him and commented, "Brute, old man, you're looking seedy. More than that, you're fat. You couldn't run twenty yards with an inflated pigskin under your arm. You need exercise."

"By Jove," Brutus ruminated, "that's right. I am fat, and I'm not fit. I'd give a good deal to feel as I did in the old days. Exercise does it." Therefore he telephones and makes an appointment with a young fellow of his acquaintance for the next Saturday afternoon.

Saturday afternoon finds him on the tennis court, a little paunchy but with the necessary equipment. Remembering his reputation as an athlete he throws himself into the game with all the old-time energy because he needs to get a lot of exercise and also show this young fellow something. He wins the first two sets, is a bit winded and more than a trifle tired; but he shouldn't stop without giving his opponent a chance, and so he goes on until it is two sets all. Now he's really tired and has ceased to enjoy the game long since; but when his courteous opponent says, "Shall we play the rubber?" he tries to recall the old college spirit—he can almost hear the crowd yelling, "Y-e-e-ay, Dalrymple"—and he gathers himself together as best he can and says, "Sure!" After losing the fifth set he drags himself home, is too tired to eat, spends all day Sunday in partial recuperation and then decides that he has been out of athletics too long, that he just can't go back to exercise again. Therefore he returns to the business grind sans fur- *(Continued on page 664)*



Ewing Galloway

The Doctor Prescribes

By CHARLES SOLOMON

IT IS always difficult for laymen and sometimes difficult for druggists and nurses to understand why physicians prescribe drugs with such care and insist on closely checking their effects. Yet there is much more to drug therapy than merely identifying certain symptoms and giving something for them.

Man seems to have a natural inclination to use almost any new medicinal discovery and to believe that it heals. Chocolate was first brought from Mexico to Europe about 1606. The brother of Cardinal Richelieu is supposed to have been the first Frenchman to taste it, and he drank it freely for a spleen ailment! Soon laymen and doctors vied with each other in prescribing or taking chocolate for all ills.

By 1617 the story was told of one great lady who imbibed the new drink so freely during pregnancy that she gave birth to a blackamoor; while other doctors were attacking chocolate as a harsh laxative fit only for Indians. By 1664 a bishop wrote a Latin treatise to demonstrate that chocolate, while not primarily a food, might, conceivably, be regarded as nutritious.

In a similar way medical miracles were claimed for tea in the seventeenth century, various persons holding it a panacea for widely diverse diseases such as gout, rheumatism, bladder stone, catarrh, dysentery and epilepsy, while the bishop of Avranches declared that tea drinking had restored his sight. Coffee, in its turn, was used to treat scrofula, hysteria and toothache, and famous physicians found it infallible for colds and serious lung trouble. On the other hand it was said that the princess of Hanau, a great coffee bibber, died of a hundred ulcers caused by coffee drinking.

Finally, when sugar was first introduced to the French market it appeared as a drug. The expression "an apothecary without sugar" was used to denote a man lacking proper incentive to his calling. In 1630, sugar was still so rare that a monthly allowance of the drug was doled out at the largest Paris hospital, the woman in charge being compelled to take oath that she used it only in compounding medicines actually prescribed.

These few instances, to which that of ether might be added, readily show that men are only too easily persuaded about the healing quality of almost anything taken as internal medicine. Actually, to prove the therapeutic quality takes long and difficult research and the most carefully controlled subjects under close observation.

Time after time, for instance, certain drugs taken by mouth have been reported as curing diabetes or lowering abnormally high blood pressure. Among other things the patients treated have been loud in their claims that they have been rendered better. Nevertheless, these observations were incorrect. The subjects were not controlled with sufficient care, or else those in charge had not observed with detachment and diligence.

It is so easy to be fooled about the effects of drugs as well as to generalize on a basis of too limited knowledge, that the knowledge and experience of the more careful physician are needed. Consider, for instance, a word such as poison. Practically every one believes offhandedly that he or she knows what a poison is. It is all very simple. A poison is . . . but what is it? Try to define it, and you will discover that no satisfactory definition has ever been formulated.

It cannot be said that poisons have ill effects, for many organisms could not live without using poison. Most organisms manufacture their own. If a snake's poison is expressed too soon after it sloughs or feeds, the creature dies.

Again, a solution of a poison may be made so dilute that it cannot possibly have harmful effects on any organism. Indeed, there is often an actual reversal effect taking place; that is, whereas large doses are toxic, smaller ones are beneficial. This is the case with some deadly substances such as strychnine, quinine, the glucosides of digitalis, arsenicals, insulin, thyroxin, parathyroid extract and pure vitamins.

Indeed, we ourselves are walking chemical laboratories manufacturing poisons. These deadly poisons circulate in our blood. A pharmaceutic chemist could prepare from our own bodies poisons as deadly as any with which a primitive tribe ever tipped its arrows and spears.

Insulin is absolutely necessary to life itself, but an overdose can easily lead to fatal convulsions. We must have 8 mg. of it every twenty-four hours, but an injection of from 20 to 30 mg. would kill an adult of average weight who had gone foodless for a couple of days. Epinephrine is needed in such small amounts that an injection of 10 mg. would kill the average human being.

This brings us to another point. We are now talking about average human beings, about people of such and such a weight and about their state of nutrition. In other words, not only does a drug have a particular effect of its own, but each individual reacts differently to the same drug.

It is often said that physicians see the patient, look wise, scribble down something illegible on a prescription blank and tell the patient to call again. But what is the good physician actually doing in such instances? He is considering the age, weight, sex and nutritive condition of the patient as well as other factors to determine the correct dosage, and he is prescribing a specific drug to combat a particular condition.

Then there is the drug itself. The form in which it is given is important since that frequently governs its action. Other important factors are the concentration of the dose, the frequency of administration, the solubility and penetrative properties of the drug preparations and the method of administration. Any one of these factors, in addition to an unusual sensitiveness or idiosyncrasy of the patient, may change the picture altogether. The doctor faces a complicated problem, and his prescription writing is a highly complex matter.

Racial differences play an important part. Castor oil is used by the Chinese for food, but it cannot—for reasons that become obvious—be so regarded by western peoples. Ephedrine produces a marked dilatation of the pupils in yellow races but only a slight mydriasis in white people. The condition of an organ, normal or pathologic, makes a tremendous difference in the reaction to any drug.

Digitalis will exhibit its life saving properties only if the heart muscle is weak and relaxed. A normal heart does not react to digitalis as does a dilated one. Similarly, antipyretics will not appreciably lower the temperature of normal persons but will produce a rapid temperature drop in a case of extremely high fever.

Ewing Galloway

TODAY, COFFEE IS DRUNK USUALLY FOR THE PLEASURE DERIVED FROM IT; BUT CENTURIES AGO, IT WAS USED TO "CURE" TOOTHACHES AND COLDS AND WAS THOUGHT TO BE INFALLIBLE FOR ANY SERIOUS LUNG TROUBLE.

The reaction of an individual to a drug must be watched closely. Thus, bismuth salts may usually be taken orally and without harm. Occasionally, however, these salts are broken up in the intestine by the action of certain bacteria, and bismuth poisoning can result. The physician must be on the lookout for such possible transformation into soluble and therefore poisonous bismuth compounds.

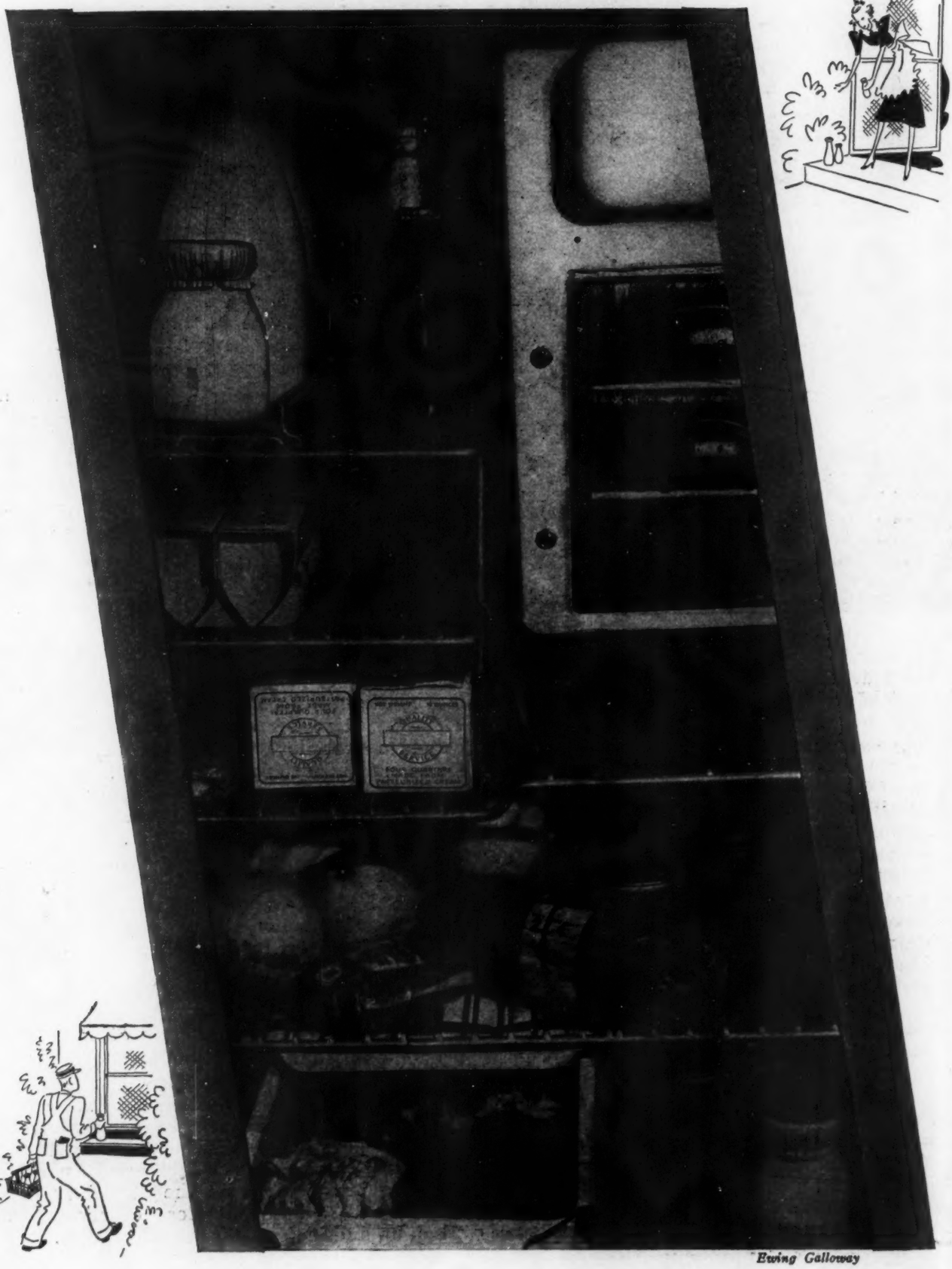
He must consider the time when a drug is to be taken, whether before or after meals. The presence of food or alkaloids in the stomach may produce the difference between fatal and harmless effects by certain poisons. Again, in order to be effective, the alkaloid quinine must be administered at a definite time in the developmental period of the plasmodia of malaria in the blood.

The frequency of administration is an important factor. The speed with which a drug is destroyed in or excreted from the organism must also be considered. Minute doses of prussic acid may be administered, for instance, and the living organism can oxidize and detoxify it. But let this minute dosage be exceeded by too frequent administration, and disaster results.

The speed or rapidity of administering drugs may mark the difference between life and death. This is particularly true of intravenous medication, a procedure that should never be followed unless definitely indicated. Also the length of time during which the drugs administered can be expected to exert their activity on the organism must be considered. Then there is the difference between acute and prolonged effects of drugs, effects of the age of drugs when administered and the possibilities of synergistic, or cooperative, action between the drugs. Will two drugs support or antagonize or neutralize each other? The administration of drugs is an extremely complex problem and one which requires training, skill and judgment.

The efforts of the conscientious and well trained physician are directed at the control of factors which, when variable, render drug therapy both uncertain and unscientific. Not only is careful diagnosis needed, but there must be scrupulous control of the patient and intelligent consideration of the possible effects of particular drug preparations on the particular individual, with subsequent close observation to check up and indicate the steps to follow.

MILK—from DAIRY to DINNER TABLE



Ewing Galloway

By ROBERT E. NEPRUD

IF YOU were asked to name the most important food in man's larder, you'd probably answer, almost without thinking, "Milk." And you would be right. Your decision has long since been accepted by physicians, dietitians and food chemists. Most families regard milk as an indispensable item in their diet.

Milk has shown a recent growth in popularity in the United States. The annual income from the production of dairy products, this country's greatest industry, has swelled from $990,000,000 in 1933 to a total of $1,465,000,000 in 1937. While higher prices are partially responsible for the rise, a sizable increase in the consumption of milk must be recognized.

"Since milk ranks at the top as a food, it seems logical to conclude that the care of this perishable product in the home is too important a problem to be met with matter-of-fact carelessness," says Prof. L. C. Thomsen of the University of Wisconsin dairy school faculty. "Housewives will find that for better health and greater economy, milk must be treated with all the consideration it deserves."

In the first place, the housewife should know her dairyman. If possible, she should visit the dairy which serves her. It is important to ascertain that its methods are such that she need have no doubt concerning the cleanliness and flavor of the product delivered to her.

A wise move in the proper care of milk is to have a definite place for the delivery man to leave the order. It is necessary to choose a place protected from dirt and from the direct rays of the sun. The milkman guards his company's product from these dangers while it is in transit; the housekeeper must protect it when it arrives.

The milk dealer, if questioned, will undoubtedly be glad to suggest a site for bottles, for he is also interested in keeping the milk in the best possible condition. Often a simple box with a lid is the best solution.

If cold bottles are allowed to stand for a time in the warm air, the milk will ooze out around the edges of the cap. This is neither sanitary, economical nor pleasing to the eye. Furthermore, the sun's rays are capable of changing the flavor.

With the coming of winter, neglected bottles are victims of the cold. The milk expands and towers past the top of the bottle, a condition both unsightly and unsanitary. Frozen milk, while digestible, is not so good as it might be and is always flaky.

As soon as the milk bottle has been left on the doorstep, the dairyman's duty is over and the housewife's responsibility begins.

A first precautionary measure is to rinse the bottle under the cold water faucet. One shouldn't hesitate to rinse off the dust that may have settled around the top; the cap is waterproof. Caps are now made which cover the entire lip of the bottle, thus protecting the milk from any germs that may have been incurred in handling. In the case of these new caps, careful rinsing is unnecessary.

Milk, like many other beverages, tastes best when it is very hot or very cold. It is vital that the milk be kept cold from the time it is received until the time it is used.

"The most important rule of all in caring for milk is to keep it in a clean, cold place. High grade pasteurized milk can be kept sweet at 40 F. for days and weeks at a time," says Professor Thomsen. "For instance, in a special test conducted by a refrigerator company, pasteurized milk was kept sweet to the taste for forty-eight days. I wouldn't suggest the hoarding of milk, however, because various chemical changes are bound to cut down the nutritional qualities after about a week. This test

merely proves the possibility of keeping milk sweet almost indefinitely under the proper conditions."

Even at 50 F., changes take place rapidly. Milk is apt to become ropy and thick at this and at slightly higher temperatures.

Milk deserves to have the coldest place in the refrigerator. Where ice is used, the milk should be put directly under it. Saving on ice does not pay. Neither is it wise to wrap ice in newspapers, for only when ice melts does it keep foods cold.

Many bottle caps are sanitary only before the bottles are opened and, once taken off, are awkward to handle. A good way to protect milk while it is in the refrigerator is to invert a glass tumbler over the bottle. Another possibility is to buy special metal coverings for bottles.

The fact that milk is quick to take up the odors of other foods, such as fish, is an excellent reason for covering all containers. The warmer the milk, the greater is its efficiency at capturing foreign odors.

When leftover milk is poured back into the bottle, all previous precautions are undone. The milk that has been exposed to the kitchen air is much warmer than that in the bottle, so a mixture tends to raise the temperature of the whole and causes it to spoil more quickly. A separate container should be kept for leftovers.

A word of warning in regard to the care of milk utensils is volunteered by the dairy expert:

"Scald all utensils. Because a glass had milk in it before isn't a good reason to pour milk into it again without first washing the glass. Bacteria and dust can always find a place in any object which has contained milk for a time. That is why we clean containers so carefully before refilling. Scalding water, lots of it, is the best way to cleanse utensils."

To use milk bottles for turpentine, varnish and other liquids is unlawful as well as unwise. City and state laws make it a misdemeanor to use bottles as general receptacles. Not only will the flavor of the milk be affected, but other bottles washed at the same time as the offending one may easily become contaminated. Paints, varnishes and oils can never be removed satisfactorily by the usual methods of washing. The only thing to do is to destroy these bottles.

Empty milk bottles should be returned daily to the dealer to whom they belong.

The bottles cost the dairyman from 5 to 8 cents each. Therefore, even when a deposit is required it doesn't cover the cost. When the customer returns bottles faithfully, he is assisting materially in lowering the retail price of milk.

It is important for the housewife to remember that poor milk spoils more quickly than does good milk and that warm milk sours before cold. The three C's which serve as guideposts to the proper care of milk in the home are these: Keep milk cold, clean and covered.

FORECAST FOR AUGUST

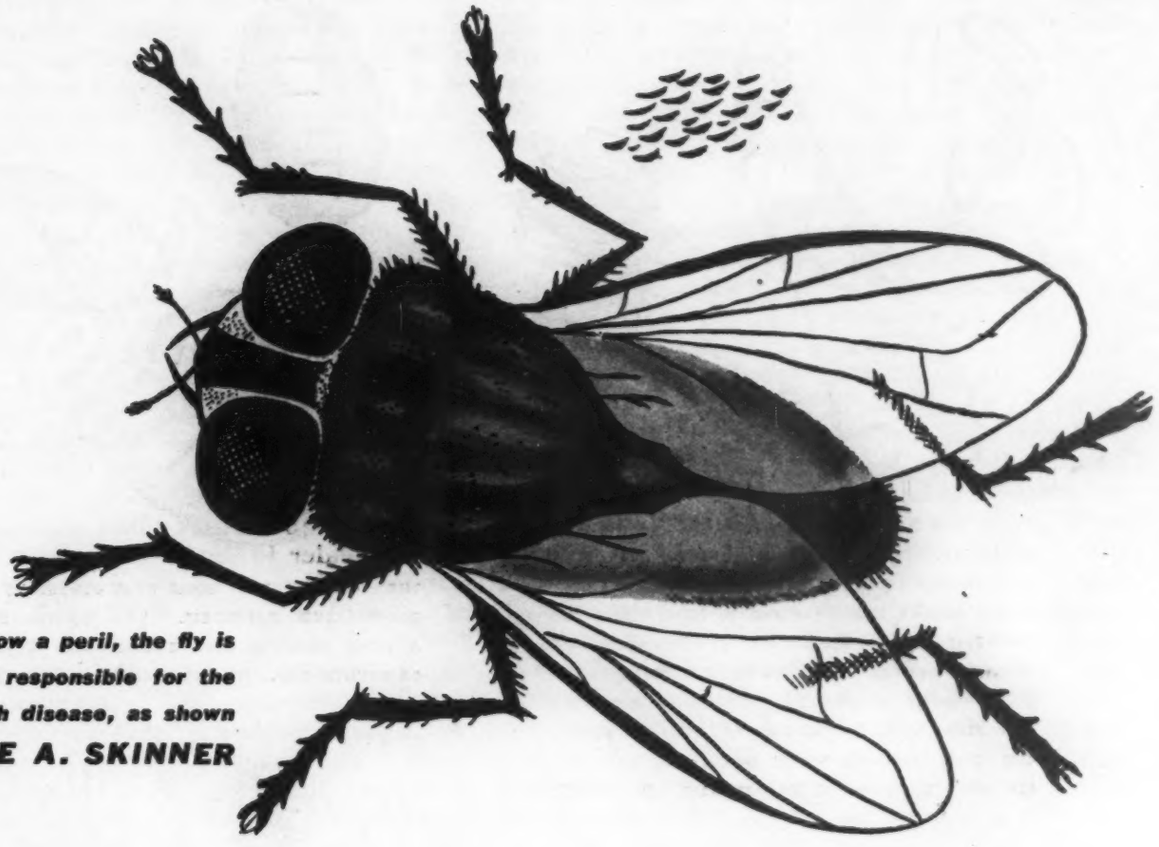
No matter whether you are going to be a camper, a resort hunter, a traveler or a stay-at-home this summer, the season will be much pleasanter if you have at your command these "open sesames" to fun, fortitude and physical fitness:

Choosing a Recreation.—*Dr. Dudley B. Reed* gives the clue to recreations which will take the mind away from debts, duties and doubts, and provide in their stead enjoyment and diversion.

A Backyard Swimming Pool.—*Dr. Allen S. Johnson* finds the key to keeping the children—and the grown-ups—happy and healthily cool at comparatively little cost.

The Weather and the Human Body.—Speaking of the weather (and who doesn't?) *Dr. Solomon Strouse* divides the world's population into two groups: the weatherophiles, those who like weather or at least are indifferent to it, and the weatherophobes, those who do not like it because they are too sensitive to its changes. Weather lore and weather logic form the basis of his interesting comments on the relation between weather and disease.

Of Mosquitoes and Men—"If men aren't biting back, at least in this nation they are fighting back," writes *A. W. von Struve* in a description of the activities of various federal agencies in the campaign to clean up malaria mosquito breeding places.



Once a pest, now a peril, the fly is realized to be responsible for the spread of much disease, as shown

By GEORGE A. SKINNER

PARASITE TRICKS: V

THROUGH THE AGES that have come and gone flies have ever been a persistent nuisance and up to quite recently were regarded only as a troublesome annoyance. With increasing knowledge of the diseases that flies may transmit they have come to be generally recognized as potentially dangerous, and few people willingly tolerate many of them. They are commonly associated with some intestinal diseases, as the name "typhoid fly" indicates; but it is probable that there are still a good many intelligent persons who do not realize how widespread the damage from flies may be or the number of varieties that may carry sickness and death in their flight.

The house fly is admirably adapted in every way to transmit filth. It is a child of filth, for the eggs are deposited in decaying organic matter to develop. The body is all covered with hairs, as are also the wings, legs and feet. A brief look at these messengers of evil in the developing and mature stages will help one to visualize how they transmit directly and indirectly a great many serious diseases.

Ordinarily in referring to flies it is the common house fly that comes to mind; but there are a number of other varieties that are found in and around houses and stables, and since many of these closely resemble the house fly, some confusion is likely to arise as to the habits and abilities of flies. House flies are usually much more numerous than other varieties, so as a rule one is correct in assuming that the flies seen buzzing around dwellings are of this variety, but if the behavior does not check with what we know of the house fly, we must look again to see with what branch of the family we are dealing.

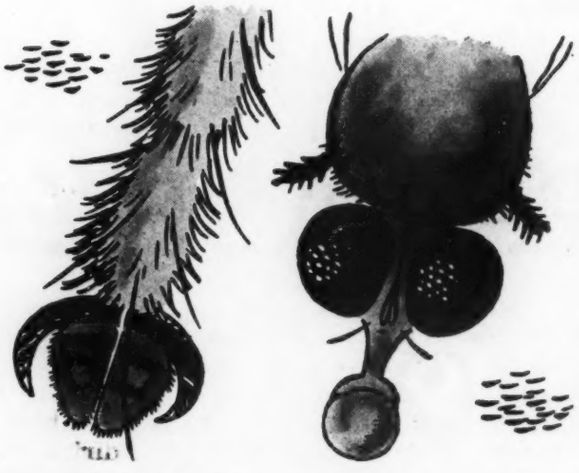
While most flies are bred in organic matter, some spend part of the life cycle in water. This sometimes complicates matters a bit.

As our contacts are mostly with house flies they will be considered as a type, and when differences arise between them and others under discussion they will be pointed out.

With the advent of the first bright days of spring, some of the vanguard of an army of flies appear. Where do they come from? Have a few, safely hidden away somewhere, been strong enough to stand the northern winter? This does happen with some insects, but so far as is at present known, flies spend the winter

AFTER HER WINTER HIBERNATION THE FLY WAKES UP IN THE SPRING AND LAYS HUNDREDS OF TINY OVAL EGGS (SEE UPPER LEFT CORNER). THE EGGS HATCH OUT OF THIS COVERING IN FROM EIGHT TO TWENTY-FOUR HOURS. A WHITE LEGLESS GRUB EMERGES (CENTER), TAPERING FROM A SMALL HEAD TO A BLUNT EXTREMITY. IT GROWS RAPIDLY FOR FIVE DAYS, TWICE CASTING OFF ITS SKIN. THE GRUB REMAINS WHITE UNTIL THE END OF ITS GROWTH, WHEN IT MAY BECOME YELLOWISH.

THE BODY OF THE GRUB NOW CONTRACTS AND BECOMES BROWN AND CYLINDRIC. THE LARVA DEVELOPS INTO A PUPA (CENTER) AND EMERGES AS A FLY THE THIRD OR FOURTH DAY. ITS WINGS ARE STILL WET AND CRUMPLED.



AN ENLARGED VIEW SHOWS THE HAIRS, CLAWS AND PADS OF THE FLY'S FOOT (LEFT). AS THE FLY SWALLOWS ITS FOOD SEVERAL TIMES, A DIRTY SPOT CONTAINING THOUSANDS OF BACTERIA IS LEFT WHERE IT WAS STANDING.

season in the pupal or resting stage and are all developed, ready to break into adult life as soon as temperature and moisture are favorable. The same is true of the fly that occasionally startles us in midwinter by buzzing merrily around our heads. Some pupae have been matured by a proper combination of heat and moisture and have appeared entirely out of season. At the beginning of the warmer weather, these pupal forms quickly mature and come forth as the ancestors of untold millions soon to be hatched.

Mating takes place almost as soon as the flies appear, and the female commences laying eggs at once. Eggs must have organic matter in which to develop, and certain types are preferred. But almost anything organic will be used in case of a shortage. Usually manure piles are the favorite localities for flies to deposit their eggs; but garbage, rubbish piles and even old newspapers, if damp, will nourish these larval forms. Often the source is difficult to trace, particularly in cities and in exceedingly clean localities. This was illustrated recently at a great university where swarms of flies suddenly appeared almost under the windows of the department of entomology. As the "bug men" were supposed to know exactly where to look to discover the source of such plagues, they were expected to correct it at once. But the usual localities where one might expect flies to breed, such as the stables of the agricultural department or the cages of laboratory animals, all proved negative; nor were sources discovered in the surroundings of the university. The flies however kept increasing, and the head of the department was much concerned and became the recipient of much good-natured "joshing." While considering the problem one day as he walked along a path toward his laboratory, he noted a pile of grass cuttings under some bushes and decided to investigate. He kicked over a part of the pile and found it literally alive with fly maggots. So the mystery was solved. It is often in some such entirely unexpected locality that the flies breed. They are cunning about placing their eggs and frequently trick us for some time.

The eggs sometimes develop in a few hours but usually within three days unless the temperature is very unfavorable. Sometimes when food is abundant, the eggs have been observed to hatch in eight hours, though this is a shorter period than usual. When first hatched the fly larvae or maggots are tiny worms, but they grow rapidly, soon split the skin, emerge therefrom in a new one and grow some more.

These periods of growth are called instars, and the shedding of the skin usually is spoken of as a molt. The skin is not very elastic, so when the worm grows he must split it open and leave the old skin behind. Usually there are three instars for fly larvae, and then they stop feeding. They crawl away from the source of food and bury themselves in the ground. Some varieties migrate some distance, usually at night, for they seem to know that nice fat worms like themselves are much desired as food by many birds, chickens and some animals, and so by morning they are well hidden in the ground. Here they shrink in size and cover themselves with a tough brown jacket, becoming entirely inactive, as far as one may observe.

This pupal or resting stage is a time of tremendous changes in the insect body. The head, eyes, wings and legs develop rapidly, and after a short time, from three to six days, the fly blows up a little bag on its head and breaks open the jacket or pupal case, emerging into the ground. It is a curious thing how this newly hatched fly knows which way is "up," for it was never a fly before and came down as a worm. But there is a sense called negative geotropism, or apogeotropism, a tendency which impels them to turn away from the center of the earth, and this remarkable sense steers them up instead of down; otherwise all flies that did not happen to guess right would perish. But they all finally reach the surface. This little bladder or sac is blown up, displaces a little dirt, and the fly moves up. This is repeated many times till it reaches the surface of the ground—a "hitch my hatchet and up I go" process. Most house flies do not have to travel far to the surface, but some other flies come through many feet of loose soil.

When the new fly reaches the surface it is still wabbly on its legs, and its wings are soft and flabby. But the action of the air soon stiffens them, and it flies off to seek food and a mate.

Some interesting and pertinent facts about flies have been determined in recent years by actual experimentation and observation. How far can flies travel on their own power? We have all seen them cling to horses, vehicles and even trains, and in this way they may move long distances; but it was formerly thought that they could not fly far on their own wings. So some one colored a group of them and turned them loose; then they were captured by interested observers, and up to fifteen miles there seemed to be little difficulty of direct flight. This experiment showed conclusively how necessary it is for a whole community to cooperate if any effort is made to rid themselves of flies. No matter how clean one neighborhood may be, destruction of flies will not avail much unless all other localities do likewise, as flies are actively searching for food most of the time; and through direct flight, wind action or transportation by various vehicles they reach great distances from their places of origin.

How long do they live? Those that are hatched early in the spring have a life of about seven months. Later broods do not live so long, as practically all of them are killed by the first frost of fall in the north. Their lives in warmer climates are limited by many enemies, and as they grow older a parasitic mite (Empusa musca) attacks and destroys them. If temperature permits, the breeding may be continuous the year round; but where frost prevails at some season, survival is maintained largely in the pupal stage. In such latent form the period of dormancy may be greatly extended, and conditions that would ordinarily prove quickly fatal have no effect on the pupae.

Many estimates have been made of the number of flies that one pair might produce in a season, and the figures are so great that few persons can comprehend them. One patient observer, however, actually counted the number of maggots to the pound of heavily infested manure and found as an average of many observations 685 worms a pound, or over a million a ton. Another observer found 1,200, which raised the number in a ton to 2,400,000; and a ton of manure is not a big pile. This number is produced not once but from seven to ten times during the breeding season; for under ordinary summer conditions, flies will mature in from ten days to two weeks. So one small manure pile in a neighborhood can produce enough flies to supply a large territory abundantly.

House flies transmit diseases in three ways principally. By means of the hairs all over the body, legs and feet, millions of germs may be distributed by a single fly. Especially are the feet admirably adapted for this process of germ carrying. Under high magnification they show long claws and a pair of pads which form a sticky substance; by means of these pads the fly is able to adhere to any surface on which it alights. Such sticky pads on the feet are perfectly adapted to pick up and carry all forms of filth as well as thousands of germs. As flies frequently pass directly from filth to human food, much food is thus badly infected and many mysterious cases of typhoid, dysentery and diarrhea, especially in infants, are thus transmitted. If a fly falls into a glass of milk the milk may be made highly infective, as any germs that fall from the fly's body will multiply with great rapidity in *(Continued on page 649)*

Tuberculosis up to Date: IV

***B. P. POTTER** outlines a program for the earlier detection of tuberculosis*

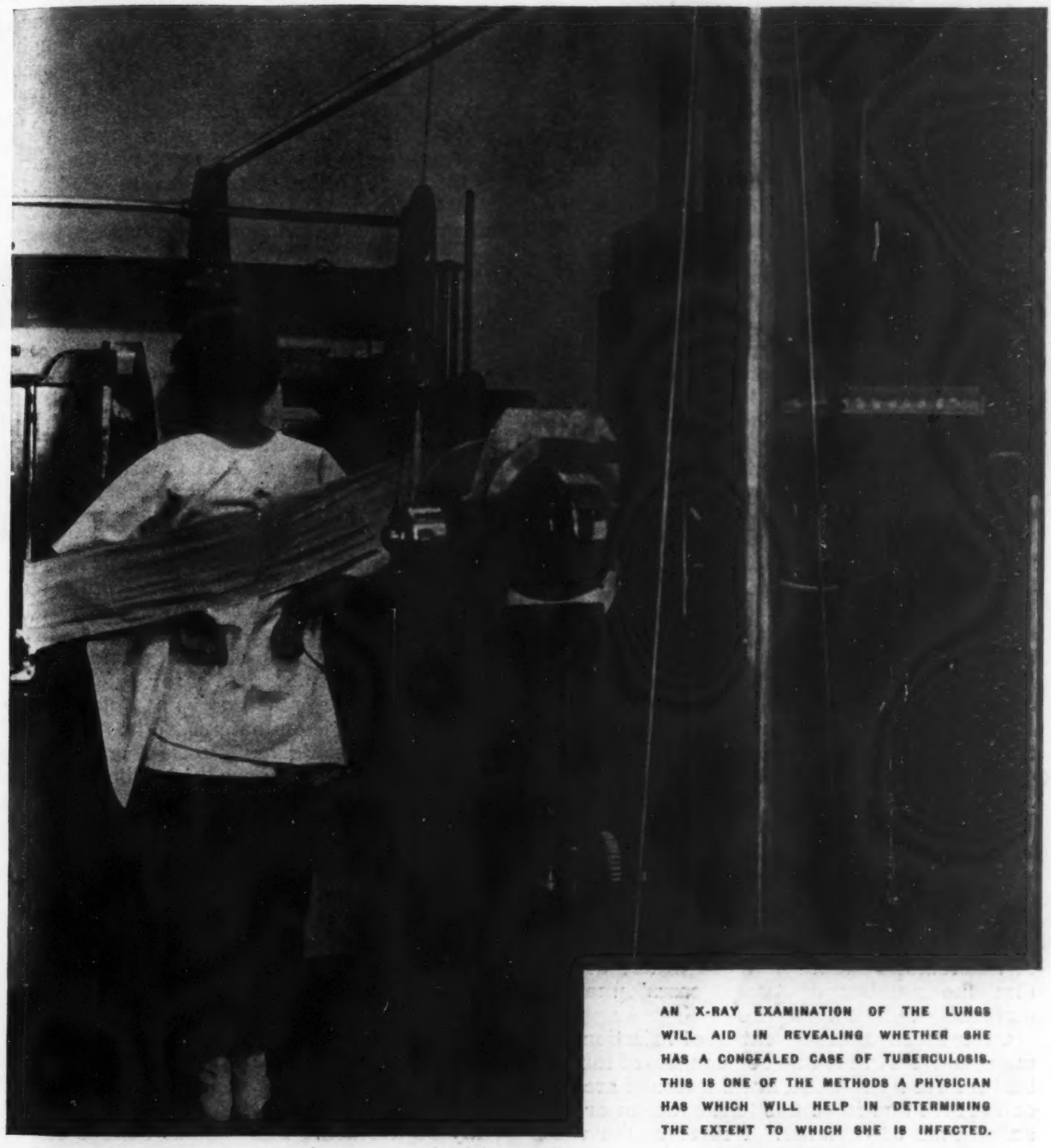
SINCE tuberculous infection is still highly prevalent and the disease of tuberculosis continues to "carry off" more individuals between the ages of 15 and 35 than any other disease, it is but natural to inquire what has been accomplished in the field of prevention and what hopes lie ahead.

To eradicate infection one must prevent the germ from gaining entrance to the body. This may appear to be a simple task on first thought, but a second consideration shows, according to Fishberg, "that it would entail the killing of the bacillus after it was eliminated from the body through the disinfection of sputum, the pasteurization of milk, the destruction of all objects contaminated by it, the killing of all animals, especially cattle, which harbored tubercle bacilli, and the sequestrating of all persons found to have been infected with the germ." In addition one is constantly confronted with "street spitters" and the large number of coughers who ascribe their cough to cigarets or to bronchitis. It is obvious then that the trivial infections encountered in the majority of adults, infections which rarely result in tuberculous disease, cannot in the present state of our knowledge be avoided.

The problem then is to prevent repeated infections and infections with massive doses of tubercle bacilli; and these, as is so well known, usually result from prolonged and more or less intimate contact with any person who has an open case of tuberculosis. It would appear therefore that all one need do is to segregate such patients; but while theoretically this appears a simple task it has proved extremely difficult and in the vast majority of instances impossible. In the first place only a small proportion of those sick with tuberculosis occupy beds in hospitals and sanatoriums. Thus there is ever present a vast army of tuberculous indi-

THE CHILDREN ARE SEGREGATED IN THIS HOSPITAL BY THE DEGREE TO WHICH THEIR TUBERCULOSIS HAS ADVANCED. THOSE WITH TUBERCULOUS TENDENCIES ONLY ARE SEPARATED FROM THOSE CHILDREN WHO HAVE ALREADY CONTRACTED IT.

Photos, Courtesy Life



AN X-RAY EXAMINATION OF THE LUNGS WILL AID IN REVEALING WHETHER SHE HAS A CONCEALED CASE OF TUBERCULOSIS. THIS IS ONE OF THE METHODS A PHYSICIAN HAS WHICH WILL HELP IN DETERMINING THE EXTENT TO WHICH SHE IS INFECTED.

viduals to scatter tubercle bacilli, but even if all individuals aware of their tuberculosis were removed from society there would still remain an appreciable number who, in ignorance of their disease, would continue to spread infection. All that can be done is to strive for the ideal which may never come unless tuberculosis is relegated by some type of vaccination to the place diphtheria now holds.

A program such as the following will provide effective means of avoiding massive and repeated infection:

1. Institute more thorough methods to trace the source of infection in all known cases of tuberculosis. This is a tremendous problem and in many cases difficult to accomplish, but an effort in that direction is bound to result in the finding of more cases of tuberculosis "carriers."

2. Methods of case finding must be changed. Less of the wholesale tuberculin testing of grade school children should be practiced, and more encouragement should be given to the tuberculin testing, including x-ray pictures of the chest, of the positive reactors in upper grades in high school and in all universities. This would not only insure continuity of observation but also result in the detection of unknown cases of tuberculosis if the source for

the infection in those found diseased is sought. Tuberculin testing without x-ray examination of reactors is of little value. Already this program is being followed in some 200 universities throughout the country and in many schools of medicine and nursing, and it has brought about gratifying results.

3. Another potent method for finding unknown cases of tuberculosis which serve to spread infection is to introduce more universally the examination of plans used by the Metropolitan Life Insurance Company and other large industrial organizations for all applicants for employment and for their employees. These schemes consist of a complete physical checking, including a fluoroscopic or an x-ray examination of the chest. By these methods many individuals with tuberculosis have been found before the disease has given warning signs. The follow-up of the contacts of these individuals has revealed many instances of infection or disease not previously known. Such studies if extended to all employees in all industries would lead to still further sources of infection.

4. Both the physician and the layman must be further impressed with the importance of heeding the little warnings spoken of as symptoms in the last article. There are entirely too many individuals parading about under all sorts of diagnoses but the correct one, and there are equally as many, if not more, individuals who are found with far advanced pulmonary tuberculosis because they fail to see a physician.

5. Public officials must be educated to realize that the hospital bed capacity in the average community is entirely inadequate and that its increase will be a great saving, for it will eventually mean a decrease in the new cases.

6. Finally, the modern methods of treatment of tuberculosis should be more widely used so that the number of "open cases" may be materially reduced.

Other attempts at prevention of infection with massive doses of repeated onslaughts of tubercle bacilli have been made, but the results are such as to leave one in complete skepticism or with an attitude of disbelief. I refer to the vaccination with either living or dead tubercle bacilli. Aside from the fact that great doubt has been cast by recent research on the innocuousness of vaccinating with living organisms, there is the impression from the available statistics that at best these vaccinations produce immunity that can take care of only the trivial infections. They do not appear to produce immunity to the damage that is likely to follow from massive doses or repeated small doses of tubercle bacilli as is the case when one is exposed to an open case of tuberculosis. Recently great doubt has been cast on the plausibility of vaccination with either dead or living tubercle bacilli. It is contended that vaccination, while it brings about some immunity, also produces a sensitiveness to tuberculin. This sensitiveness, it is thought, is responsible for some of the grave inflammatory changes which accompany the tuberculosis that results from a second infection. It is evident therefore that the program outlined for the limiting of infection remains the most potent in the present state of our knowledge.

As to the prevention of disease the problem is not much different from the one we are confronted with in the prevention of infection. Many surveys consisting of tuberculin testing and x-ray examination of positive reactors have been made on school children of all ages. The object of these surveys was to find those persons that had been infected and to detect among the infected ones those actually suffering from disease. However, it soon became evident that a single test is no guarantee of the future course of events in any case. It is thus easy to conceive that a child with a negative tuberculin test may have a positive reaction several weeks or months later, and similarly a child with positive tuberculin test and negative results on x-ray examination may show an active lesion several months hence.

It would appear that to detect disease in its earliest stage by this method would require initial tuberculin tests and x-ray examinations of the positive reactors and subsequently bi-yearly x-ray examinations. Those negative to tuberculin would have to be retested about every six months, and once the test became positive the routine just outlined for the positive reactors would have to be put into force. It has been found however that even this program is not practical in school children under the teen ages, for in these, tuberculous disease is so rare that the cost involved to detect the occasional case out of thousands examined is prohibitive. In the teen ages, therefore, or in other words in high school and college students, this program carries more logic; but if high schools and universities would carry out a periodic physical examination, the latter program as a separate endeavor would not be needed.

The trivial innocuous infections cannot apparently be avoided. Tuberculous disease can be picked up early, but as yet no one knows how to prevent it. Until science can explain why in one individual infection results in disease later in life while in ninety-nine others it does not, we shall remain in the dark regarding methods for prevention of disease. It is obvious that all our efforts must be bent toward the prevention of massive and frequent infections and toward the close observation of infected individuals through the period of life when disease is most apt to occur. The program herein outlined indicates present-day trends which are most likely to yield best results in this direction.

[NOTE.—In the August issue, Dr. Potter will discuss climatic and drug treatment of tuberculosis.]

FIRST AID

Ewing Galloway

By ALLEN S. JOHNSON

EVERY YEAR many vacations are needlessly spoiled, and not infrequently the health and even the lives of campers are foolishly jeopardized by accidents in camp or on the trail. A practical knowledge of first aid principles may prevent tragedy; certainly it will make the "slings and arrows of outrageous fortune" easier to bear. Practical first aid means using your limited equipment in the application of fundamental medical and surgical principles. These principles deal with the control of hemorrhage and shock and the relief of pain and discomfort. It is not to be assumed that any but trifling injuries can be adequately treated by such first aid; but needless suffering can be prevented and many complications forestalled so that the final medical attendant will not be unduly handicapped in his subsequent care of the case.

One may reasonably assume that the average camper will have a small ax, a knife, stout cord, baking soda, tea, soap and handkerchiefs as part of his standard equipment. Because of its general usefulness in odd repairs a roll of adhesive tape is likely to be included. A few rolls of 1 and 2 inch gauze bandage and sterile surgical gauze pads wrapped in wax paper add little to the weight or bulk of the camper's outfit. A suitable sedative drug, preferably chosen by the camper's physician, should be included. A small pair of blunt nosed or bandage scissors may be convenient and finally, if space permits, a small bottle of half strength tincture of iodine with a stopper applicator.

Cuts, especially those resulting from enthusiastic but badly executed ax work, entail three types of risk: hemorrhage, loss of function due to severance of a nerve or tendon, and infection. When blood spurts out of a wound don't try to remember what your high school first aid instructor said about tourniquets. By the time you have decided whether the tourniquet should be applied on the heart side or the far side of the wound serious loss of blood may result. There is one simple principle that is as important in the modern operating room as it was when the little Dutch boy stuck his finger in the leaking dyke; that is, direct pressure. You may not entirely control the bleeding, but you will surely reduce it, and in the meantime you can collect your wits and work out a more convenient and effective method of hemostasis. If you have a fairly clean handkerchief, press it against the bleeding point. If the source of the bleeding can be forced against unyielding structures like bone or if counter pressure can be applied with the other hand, the bleeding will be easier to control. But don't delay just because sterile gauze or even a clean handkerchief is not immediately available. Press your thumb against the point of maximum bleeding. Of course it's unsanitary, but people die of hemorrhage much sooner than they do of infection.

Next comes the problem of a temporary dressing. If direct pressure has controlled the bleeding a clean handkerchief or sterile gauze pad firmly bound in place with bandage or twine will probably suffice. If bleeding persists in spite of elevation of the part, a tourniquet should be applied. By this time it should be evident that it should be applied between the heart and the bleeding point. Flexible rubber tubing wound tightly around the limb above the bleeding point and then tied is the most effective, but the camper must usually resort to substitutes. A heavy handkerchief, a light rope or a heavy cord is tied about the limb, and a stick is thrust through the loop so that by twisting the stick this improvised tourniquet may be tightened until bleeding stops.

Mention of the best points at which to apply the tourniquet on each limb has been deliberately omitted. The reader who has sufficient anatomic knowledge to grasp and remember such instructions would gain nothing by reading this elementary article. The tyro, on the other hand, would never be able to remember these instructions when faced with an emergency. There are two main reasons for a tourniquet's failure to control bleeding. Either it is not tight enough, or else it is applied to the wrong side of the wound with reference to the heart. About every fifteen or twenty minutes the tourniquet should be loosened to permit a few seconds' blood flow into the extremity in spite of bleeding; otherwise gangrene may result.

Once the bleeding is stopped the wound may then be inspected and efforts may be made at mechanical cleansing. All dirt must be removed with soap and water, and copious irrigation with boiled water is desirable. In minor wounds where the bleeding is not serious this may be done at once; after this a clean dressing is bound firmly in place. Dilute tincture of iodine may be applied if available, but mechanical cleansing is of paramount importance. A clean wound will heal without antiseptics, but no germicide can sterilize a wound full of dirt.

If impairment of sensation or of motive power suggests damaged nerves or tendons, competent surgical attention must be sought immediately. Likewise a gaping wound that cannot be held together by bandaging will require suturing by a doctor. This is a treatise merely on first aid, not on backwoods surgery.

Sprains and fractures may well be considered together as it is often impossible to differentiate them without an x-ray examination. Of course obvious deformity and distortion of the normal bony landmarks leave little doubt as to the nature of the injury. Often, however, the swelling of a "sprained ankle" masks a broken bone in the lower part of the leg. One cardinal principle taught by the war was to "splint 'em where they lie." Immediate immobilization of a broken bone accomplishes two important things. It lessens the pain, which may be shocking in its intensity, and it prevents further damage to the injured parts by the jostling of transportation. If the pain is severe a sedative drug should be given at once.

The injured limb should not be handled until all is in readiness for splinting. There are two elements to our emergency splint: padding, which may consist of folded blanket, sweater or soft clothing, and rigid support, for which canoe paddles, light boards or hewn saplings of appropriate length may be used. The splint should be long enough to immobilize the joints above and below the injury. The limb is gently lifted and evenly supported to avoid increasing the deformity while the padding is wrapped over, above and below the injury. The rigid supports are then applied to three sides and bound firmly in place with bandage, rope, cord or torn strips of clothing. These measures are particularly applicable to obvious fractures of the lower extremities which prevent weight bearing. Ambiguous injuries of the sprained ankle type may not require immobilization by splints, but they do require rest and the avoidance of weight bearing. A sound rule is to avoid any activity which causes pain. In the case of the upper extremity the forearm may be supported from the neck by a sling improvised from the clothing.

None of these measures is to be regarded as adequate or ideal treatment. They are, as the name implies, first aid for the purpose of minimizing pain, shock and injury until adequate medical attention can be secured.

The word "tenderfoot" usually conjures up the picture of a limping blistered wretch far from home. A good deal of his misery could have been prevented if he had broken in his hiking shoes gradually before he left home, allowing his feet to become toughened in the process. Unfortunately a good many devotees of the wide open spaces break in both shoes and feet on the trail. At the first sensation of pain remove the

CAMPING HAS ITS HAZARDS WHICH CONTINUALLY ARISE WHETHER OR NOT THE CAMPERS ARE EXPERIENCED.

H. Armstrong Roberts

shoe and sock to be sure that a pebble or a wrinkle is not responsible. If the skin is as yet unblistered the area may be protected by the direct application of a piece of adhesive tape. If a water-filled blister has formed, it should be covered with gauze or cotton secured by adhesive. The type of dressing that combines gauze and adhesive tape in one pad is ideal and is easily carried in the pocket. Avoid breaking the blister. Above all, resist the temptation peculiar to mankind to poke a hole in it "to let the water out." This fluid is not a distillate of the devil but a protective device of nature to guard the delicate underlying tissues from injury. If the blister can be kept intact for forty-eight hours, this underlying skin becomes tough and resistant to infection. But until then it is sensitive and extremely vulnerable to the germs which are inevitably introduced when the blister is pricked. If through mischance or design this blister has been broken, enough should be trimmed away so that the whole area may be flooded with iodine. A clean dry dressing is then applied and held in place with bandage or adhesive.

Frequently, broken blisters or fishhook wounds result in infection. Complete rest of the inflamed part is essential until pain, redness and swelling subside. In the meantime the application of moist heat will hasten recovery. If the injured part can be immersed more or less continuously in hot water, so much the better. In lieu of this, cloths saturated in hot water may be continuously applied. In this connection a word of conservative advice about gunshot wounds is in order. If there is serious bleeding it should be controlled as already described, provided this is feasible. Gunshot wounds of the chest or abdomen are a serious surgical emergency beyond the scope of first aid. But in any case don't let your admiration for Hollywood scenarios induce you to probe for the bullet. That is a task for a competent surgeon who is likely to need all the help that a modern hospital can give him.

Sunburn and burns from fire may logically be considered together, as they differ not in the mode of production but merely in the rate at which the skin is subjected to injury. A paste or strong solution of baking soda (sodium bicarbonate) and water, liberally applied, will give considerable relief in the case of mild burns, but the most satisfactory treatment consists of wet dressings of tannic acid. This is readily made from boiling strong tea for several minutes. The solution is allowed to cool and is used to keep the dressings saturated for several hours. When the inflamed area of the burn has begun to tan, application of the dressings may be discontinued.

Like many other ills the prevention of poison ivy is more satisfactory than its treatment. Persons known to be susceptible should be immunized before embarking on a camping trip in poison ivy country. Failing this, they should certainly make an intelligent effort to avoid contact with the plant. Nevertheless, if this occurs the exposed parts should immediately be scrubbed with a generous lather of soap and water. Should the characteristic eruption of poison ivy, oak or sumac develop, continuous wet dressings of a cold solution of baking soda may give considerable relief. Likewise a thin paste of baking soda will lessen the discomfort of insect bites.

Snakebites are a more serious problem. The realization that injections of antivenin may be life saving is not comforting if you are miles from a reliable supply. Complete inactivity on the part of the victim will slow his blood flow and retard the rate of absorption of the poison. A tourniquet applied between the heart and the bite will likewise prevent the poison from invading the system. Finally sharp knife or razor cuts into the puncture wounds made by the snake fangs will produce bleeding which may help to wash out the venom. This may be enhanced by oral suction. Whisky is not an antidote for snakebite. Many a victim has died from the effects of the whisky rather than from the snake venom itself.

Diarrhea curtails a hiker's activities almost as much as a broken leg. It may result simply from a sudden change of diet. More often it is due to food that has spoiled. Occasionally it may be the forerunner of a surgical emergency like appendicitis. Rest is of paramount importance. Not only should the victim remain quiet in camp, but his digestive tract must be spared the effort of handling solid food. Water and strong tea may be all that the camp fare offers, but it is vastly preferable to pork and beans. Since nature is trying to rid the body of an offending substance it is illogical to check the diarrhea at once. If, however, after curtailment of the diet and a dozen loose stools there is no abatement of the diarrhea, a sedative drug may be given and repeated in from three to four hours if needed.

The problem of abdominal pain, especially if attended with nausea and vomiting, is a vexed one at best. Locomotion under one's own power may be all that is needed to cause an inflamed appendix to rupture. All too often a medical companion may be puzzled as to whether to risk such a catastrophe for the sake of reaching civilization or to trust to a sedative and complete rest in camp to secure a temporary subsidence that will render the journey less hazardous. These issues will have to be decided according to circumstances. One cardinal principle should always be kept in mind: Never give a cathartic in case of stomachache; give nothing, except perhaps water, to a person suffering with abdominal pain, nausea, vomiting or diarrhea.

***Ancient, obstinate and dangerous, this disease sickens several millions annually, says* RUTH CAMPBELL**

MALARIA, it may be claimed, is an "uninteresting" disease. It has none of the dramatic appeal of bubonic plague; it lacks the mystery of leprosy, and it is without the menace of typhoid, diphtheria or smallpox. Moreover, in the minds of many, malaria went out with bustles in the eighties and is no longer a matter of concern except perhaps in the jungles of Africa, India or Ceylon. It is true that malaria is prevalent in these places; it heads the list of diseases in most of the English colonies, and in India more than a million people die of it yearly. But, unfortunately, it is also true that it does not confine itself to the tropics.

Ten thousand deaths was the toll it took in the United States in 1936 alone. This is the estimate of J. A. Le Prince, senior health officer of the U. S. Public Health Service. It may be contrasted with 23 reported deaths from smallpox, 3,325 from typhoid and 3,620 from diphtheria. And for every person who died of malaria there were 500 who suffered from it—a total of 5 million cases, again quoting Le Prince (*Engineering News-Record*, Sept. 17, 1936).

If 1 per cent of the population of a section is stricken with typhoid it is considered a bad epidemic. Yet frequently in parts of our southern states from 40 to 60 per cent of the people are suffering from malaria. The late Henry Rose Carter, distinguished sanitarian and epidemiologist of the Public Health Service, said he had seen outbreaks in which 90 per cent of the local population was ill with it. A disease that bedevils several million people in this country in one year is worthy of thoughtful consideration. This would be true even if the serious economic losses due to it were disregarded.

Any one who has suffered from the disease can give a vivid description of an attack if he can bear to recall it. It consists of three parts: a stage of chill (ague), a stage of fever and sweating and a stage without fever. In the chill the skin becomes puckered and blue, and no amount of clothing or blankets is sufficient to warm the sufferer, who literally shakes from head to foot, while his teeth chatter. The fever really begins while the patient still feels cold, and it may go higher than 106 degrees. The patient is tormented by a racking headache. Soon sweating sets in so profusely that clothing and bedding are saturated. When the sweating subsides, in ordinary cases the fever becomes practically normal. The whole attack from the commencement of the chill may last from six to ten hours. After an attack is over, the patient may feel a little weak but will proba-

bly be able to go about his business. If the attacks continue, his strength is undermined, and he may become a semi-invalid. An inescapable lethargy weighs down the limbs of the chronic sufferer. In severe cases the patient is of course unable to leave his bed, and he may die in a few days.

For an understanding of what malaria is and what it does to its victims one must go beyond the patient's symptoms; one must pause for a moment and look through a microscope at some of his red blood corpuscles. Malaria is caused by a one-celled animal parasite, the plasmodium, which attacks these corpuscles. Once having succeeded in getting into the blood stream, the plasmodia enter the red corpuscles, grow and divide inside them. This process of division, which takes place at regular intervals, accounts for the periodicity of the attacks.

The period between attacks varies. This characteristic of malarial fevers was noted as far back as the fifth century before Christ, in the days of the Greek physician Hippocrates, and is responsible for the names of the chief types. There are three main types of malaria, and these correspond with the three main types of plasmodia which have so far been isolated. These are benign tertian, quartan and malignant tertian; the last named is also called subtertian, estivo-autumnal malaria and tropical fever. The miner's fever of California gold rush days was really malignant tertian malaria, introduced from the South. The deadly blackwater fever, which has its own peculiar characteristics, is also caused by the parasite of malignant tertian malaria. Incidentally, blackwater fever is not a stranger to the United States.

In the case of both benign and malignant tertian malaria the attack comes every other day; that is, the cycle takes forty-eight hours to complete. In the malignant tertian type the period is generally somewhat irregular. In quartan the cycle requires seventy-two hours; hence the attacks come every three days. It is of interest in passing to note that, strictly speaking, tertian, like quartan, belies its name. It is only by counting the day of the first chill as the first day, the day without a chill as the second day and the day of the second chill as the third day, that the origin of the term "tertian" can be explained.

Obviously, any description of malaria as brief as this is somewhat misleading. The disease is capable of endless variation; different types may be mixed in the same case, and the resulting complications may still puzzle a specialist in tropical diseases. The microscope has been a great aid in intelligent diagnosis.

However, one of the basic facts about malaria, as it affects those who have it, is simple. A parasite that feeds on the red blood corpuscles will obviously cause serious anemia and bring about a state of general ill health and malnutrition. Another basic fact about malaria is that one attack of it does not result in immunity, as happens after an attack of yellow fever or smallpox. Instead, one serious attack of malaria often seems to predispose to another. Those who have managed to survive for a considerable period of time in a malarious country generally have a certain tolerance for the disease; yet even these are likely to succumb to it in an epidemic. Also, those whose general health has been undermined by malaria are especially susceptible to other diseases. Often when malaria does not appear on the death certificate it is the real cause of the fatal outcome.

The effects of malaria are mental as well as physical, a fact which has not been given the importance it deserves. Children with chronic malaria have been found to be backward at school, and frequently they must be classified as feebleminded. The anemia that comes from the disease makes concentration difficult. Dr. C. L. Leipoldt, in reports to the Transvaal Department of Education, stated that he found a relation between chronic malaria, feeblemindedness and "poor whites." During the World War, Professor de Brun of Beyreuth noted in malarious French soldiers a marked enfeeblement of the memory and decreased ability to do intellectual work.

The nation's loss in mental vigor and ambition due to malaria cannot, unfortunately, be evalu-

SIR RONALD ROSS SOLVED THE MALARIA MYSTERY.

ated in terms of dollars and cents. However, some sort of an estimate can be made of the direct economic loss. If we take Dr. Le Prince's statement that 5 million people suffer an attack of malaria every year in the United States and that each case represents an average outlay of $17.30 for medical care and drugs (according to the estimate of A. W. Fuchs in "Economic Losses from Malaria"), we have a total yearly loss of nearly 100 million dollars. This represents only a part of the actual loss, which includes deductions from earnings and general loss of earning power traceable to the physical and mental enfeeblement of chronic sufferers. It is obvious that while an attack is in progress the sufferer is in no condition to do a day's work, and such direct losses should be counted.

In the course of centuries many strange remedies have been tried for this exhausting disease. Barbarians attacked by it outside the gates of Imperial Rome leaped into the Tiber to relieve their fever. This "remedy" of jumping into a river was advocated here in the United States as late as the Civil War.

Some of the so-called remedies used in England in the same period are recorded in that extraordinary periodical *Fenland Notes and Queries*. The editor, the Rev. W. D. Sweeting, vicar of Maxey, Market Deeping, wrote in the issue of October 1896 that great confidence was still placed in charms, such as lucky sixpences, cramp-rings, perforated stones and especially in written symbols, verses or words. In particular, the word *abracadabra,* written backward in the form of a triangle, had been considered good for the ague for many centuries.

A year later, in October 1897, the vicar again touched on the subject of cures for the ague and gave evidence to show that in 1857, live spiders were still held in high esteem for this purpose and were worn in a bag tied round the neck or were swallowed, wrapped in paste, as a sort of live pill.

If the nineteenth century saw many still depending on such remedies as these, it also saw increasing use of a really effective remedy, cinchona bark. This had been discovered by accident in Peru about 1640 and introduced into Europe soon after. A quack made a fortune from it by curing Louis XIV, and its fame was spread by Mme. de Sévigné and others. However, variations in quality, adulterations, exorbitant prices and ignorance in medical matters served to prevent its general use. Quinine, which is extracted from it, is still the standard remedy, although some other drugs have recently been tried for special cases.

Since there is no such thing as vaccination against malaria, any one required to linger in a malarious region should provide himself with a supply of quinine and should take it regularly. The drug goes into the blood stream and is the most efficient agent known for preventing the development of the parasite. The few who cannot take quinine because of a heart condition or for some other reason should be especially careful to avoid infection, as they may have great difficulty in checking the disease.

Nineteenth century doctors and scientists were not content merely to treat malaria with quinine. The cell theory was advanced and substantiated, and everywhere investigators were looking through microscopes in an effort to learn the reasons for disease. The French physician Laveran, casting aside the view held for centuries that malaria was due to infection of the air by poisons from marshlands, first recognized the parasite in 1880. But his discovery did not solve the malaria problem—how to keep the disease from attacking large numbers of people each year. It was essential to know where the parasite came from and how it got into the blood. Dr. Patrick Manson, English specialist in tropical diseases, thought the mosquito might be involved in the transfer of the parasite. He suggested the idea to his friend Ronald Ross, a young English army doctor. The theory captured Ross's imagination, and he set to work to test it in 1895. If the parasite entered through the proboscis of the mosquito, then it must be present in the mosquito. The difficulty was to find it.

Ross worked for more than two years seemingly in vain, dissecting every mosquito on which he could lay his hands. He was stationed in India, where he had no laboratory facilities and where working conditions were far from ideal. Only one thing was propitious—there were plenty of mosquitoes. But they did him no good for he could not find Laveran's plasmodium in any of them. In spite of every discouragement he refused to relax his efforts. Finally, in the intense heat of an August day in 1897, when almost worn out by fatigue, his eyes overstrained by looking for hours through the cracked lens of his microscope, he picked up a female Anopheles mosquito that had recently fed on the blood of a malarious person. In the walls of her stomach he was able to recognize the parasite. Reading the lines he wrote to his wife that night, one feels some of his exhilaration on seeing the key to the problem that had baffled his fellows for centuries.

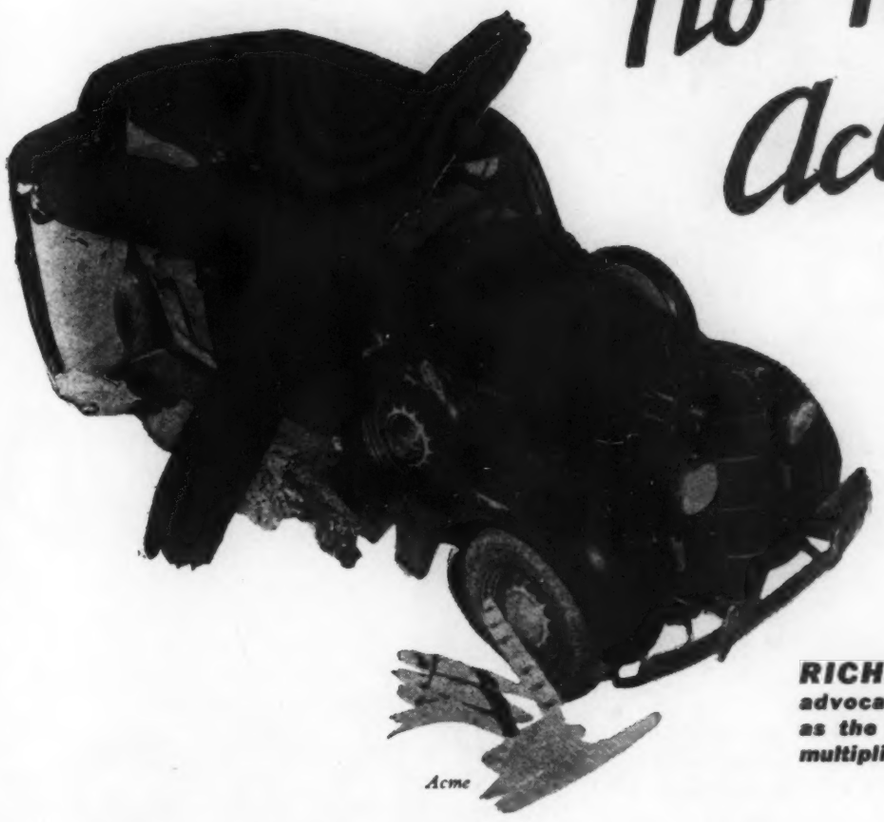
This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At his command

Seeking His secret deeds
With tears and toiling breath
I find thy cunning seeds
O million-murdering Death.

I know this little thing
A myriad men will save.
O Death, where is thy sting?
Thy victory, O Grave?

(Continued on page 658)

No More Accidents



Acme

RICHARD ADAMS LEARNED
advocates a new kind of crop control as the harvests of death are rapidly multiplied by the carelessness of man

NO MORE ACCIDENTS! Can it come true in the United States—or only in Utopia? The 1937 accident totals indicate that a larger traffic accident death toll was exacted last year than ever before. Thirty-nine thousand, five hundred drivers and pedestrians met death in 1937, as against 38,089 in 1936 and 36,369 in 1935. Last year, however, did show improvements made in other categories. Total accidental deaths amounted to 106,000 men, women and children, instead of 110,052, which was the all-time record set in 1936. Twenty-five thousand fewer persons were permanently disabled last year when 375,000 such injuries occurred instead of 400,000 the year before. Less than 10 million were temporarily disabled, a year's decrease of over 900,000. However, within the home, 32,500 persons were killed, 140,000 others were injured permanently and 4,600,000 temporarily disabled. This means that unless we are more careful in 1938 than we were in 1937, one out of every twelve of us will be killed or permanently or temporarily disabled in an accident this year.

All this is totally unnecessary; we are a careless people, and we must correct this carelessness. In recent years our rate of persons killed in accidents was higher than that in any of the twenty-three countries whose records are available. Hungary had a rate in 1935 of less than a third of ours. It is stated in *Collier's Weekly* (Aug. 21, 1937) that the cost of accidents to the American people is a sum far larger than that collected in federal income taxes. It would be a good idea to use some intelligence and save part of these billions spent because of accidents and save some lives and human suffering as well.

The places where most of the accidents occur are the home and the farm. This is possibly because there is not the control in the home or on the farm that there is in the great industrial establishments. Then again when at home one has a feeling of safety; the very word "home" implies a safe refuge from the ills of the world and thus creates a mental condition of carelessness. It does not seem so necessary to be on one's guard in the sanctity of the home. So the unfastened rug on the slippery floor, or the back of the chair or sofa used because it is too much trouble to get the step ladder, the leaky gas jet, the electric fixture touched with wet hands or while in the bath—all these seize the opportunity to create an unnecessary and avoidable accident.

On the farm the farmer is his own boss. There is no one to tell him he must not take chances, so he takes them, with the result that

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HOME ACCIDENTS

SITUATIONS WHICH OFTEN BRING FATAL RESULTS ARE USUALLY THE ONES MOST EASILY AVOIDED BY ATTENTION TO PRECAUTIONARY TRIFLES. KEEP MATCHES OUT OF THE REACH OF YOUNG EXPERIMENTERS. NEVER SMOKE IN BED. AND WALK WITH CAUTION ON SOAPY FLOORS.

one fourth of the people killed in America in all occupations are killed on the farm. Now compare the records of some of the industries where an earnest effort is made to prevent injuries. One of the Du Pont rayon plants worked 11,361,846 hours without a single disabling injury. The record of the General Time Instruments Corporation at La Salle, Ill., is almost as good; the Southeastern Greyhound Lines of Alabama covered 1,249,143 miles without any accident resulting in death, injury or property damage. "Can a man by taking thought add a cubit to his stature?" Perhaps not, but he may add years to his life, which is more to the point.

Acme

Although I do not know of any reliable statistics which show the relative proportion of automobile accidents caused by men and those caused by women, I have found women drivers, as a rule, more careful than men. Occasionally one finds a woman who drives with the idea that, provided she has the right of way and blows her horn loudly and frequently enough, she has acquired the whole theory and science of motor car driving. But then one may also occasionally meet men suffering from the same obsession. There is the classic case of

> Josiah Mears who used to say
> He meant to have his right of way,
> So he didn't "listen, look and stop."
> They towed Joe's flivver to the shop
> And in the course of a week, or two,
> They had it about as good as new.
> But although they hunted high and low
> They found no extra parts for Joe.

Ewing Galloway

You may think that this is treating a serious subject in a flippant and heartless manner, but there is method in this madness. You may be told for days on end to be careful when crossing railroad tracks; yet what would be the result? Practically nothing, it wouldn't register. You have heard it before—it is old stuff. But let this little jingle sink into your subconscious mind, and the next time you come to a railroad crossing you will find yourself unconsciously repeating, "They found no extra parts for Joe." You *will* listen, look and stop, and perhaps your own life will be saved as well as the lives of others.

The one way to eliminate accidents at grade crossings is to eliminate the crossings. There is not a grade crossing in this country which, in the present state of engineering science, could not be elevated above the road or depressed beneath it. Something, but not nearly enough, has been done to compel railroads to eliminate these crossings.

Despite the almost universal provision of gates the National Safety Council says that in 1937 the number of people killed at grade crossings in the United States was 1,875, the nonfatal injuries 5,136. The carelessness of motorists adds largely to the total of these accidents. In 4,072 accidents at crossings, involving railway trains and motor vehicles, 15 per cent in the daytime and 20 per cent at night happened with the automobile hitting the locomotive; 4 per cent happened in the day with the automobile hitting some other part of the train and 36 per cent at night. So here are accidents, many of them fatal, which do not just happen, but which are created by the apathy of legislators, the cupidity of railroads and the carelessness of motorists.

A short time ago while I was driving on one of the main roads in New Jersey a bus in the lane to the right suddenly swerved across directly in front of me. Fortunately my brakes were good, and also fortunately there was no one close behind. That bus had swerved because a dog jumped across the road almost under its front wheels. If there had been an accident, many would say that it was unavoidable; but it was not, for dogs can be taught to cross the road properly. Not long ago a Boston bulldog walking down Park Avenue, New York, stopped at every cross street until his mistress said that he might cross. *Dogdom* reported recently that since serious accidents are often caused by dogs deciding at the last moment to cross the street in front of cars, the police of London, England, have opened a school for dogs where experienced trainers instruct them in the proper street behavior. The course is free, and so many dog owners have availed themselves of the service that there is a long waiting list.

Many motor car accidents are caused by traffic violators; the New York *Times* said recently that Yugoslavia has introduced a novel and effective manner of dealing with these people. In Zagreb when a driver is told to pull over to the curb, following some traffic code violation, he is made to deflate all his tires. This amounts to a sentence of a certain amount of hard labor, or a fine of whatever it costs the offender to have his tires pumped up again. It also avoids cluttering up the courts with traffic cases and makes it unnecessary for the policeman to take time off to appear as a witness. This method of curbing wild drivers is said to have caused a considerable fall in the number of accidents in the streets of Zagreb. It is a way of making the punishment fit the crime.

A book which all should read who are interested in the subject of safety is "Accidents and Their Prevention," by Dr. H. M. Vernon, member of the Technical Advisory Board, National Institute of Industrial Psychology, London, England. This book was reviewed in *The Journal* of the American Medical Association (Aug. 7, 1937), and this review is here being rather freely drawn on. In this book is presented a comprehensive study of accidents of many kinds, on the road, at home, at play, with an account of methods of prevention already used and suggestions for further means of avoiding accidents. Dr. Vernon clearly shows that a small percentage of persons have most of the accidents and that psychologic tests for accident proneness are of definite value. The relationship between physical condition and accident proneness is important, since some easily determined conditions, such as high blood pressure, poor sight, obesity and indulgence in alcohol, are associated with a high accident rate. Then there is the question of reaction, of how quickly the muscles of the person under examination respond to the brain impulse, for sometimes a split second marks the difference between accident and safety. Dr. Vernon states that from 50 to 90 per cent of all accidents are preventable by legal control or education.

No more accidents! A counsel of perfection; but what a goal that is to strive to reach! It is perhaps impossible to reach it in its entirety but certainly possible to approach it closely. Accidents for the most part do not happen; they are largely created through carelessness. As long as human beings continue to be careless human beings the seeds of carelessness will produce their crop of accidents. By being careful, you can do your share toward reducing this crop to a minimum. Here is a new kind of controlled crop production, in which each of us can share.

Take to heart the thought that accidents are preventable, and act on it. Dr. Vernon says that they are 90 per cent preventable. Try in every way possible to do your part in making that come true in these United States of America. If you will do this we may go a long way on the road to No More Accidents!

A recent dramatic appeal, entitled "Dear Driver," in which a father pleaded with motorists to drive carefully and protect his little daughter, attracted nationwide attention when it was read in open court by Traffic Judge J. M. Braude of Chicago. A few days later Judge Braude received the letter printed on this page. It is reproduced through courtesy of Public Safety magazine.

Awaiting the

JUDGE BRAUDE:

I have just read your letter to "Dear Driver."

I'm glad you CAN say "Dear Driver," because I can't. Sometimes when I think of drivers they appear as something between a leopard and an elephant—they sneak up quietly with great speed, like a leopard, but suddenly become as huge and impossible to stop as an elephant.

You see, I'm a mother. I have a daughter, too. If she's a wee bit late getting home from school I become so horribly frightened I think death would be preferable to the awful torture I must endure. I even dislike letting her go out to play, because, as you say, I cannot be with her.

But, of course, she must go out to play—"all the other kids do." At night I am afraid to pray that God will watch her and keep her from harm, because I used to do that when we had our daughter *and our son.*

Now we don't have him any more, because I let him go out to play once too often and one of your "Dear Drivers" cut him down.

Less than ten minutes after he went to play some of my neighbors brought one of his little shoes up to my apartment.

You should see what being hit by a car can do to shoes! I didn't recognize that shoe. He had on his play shoes—we were saving his new shoes for special occasions. He was buried in them!

Honestly, Judge Braude, it takes much strength to go to look at a child you have bathed—one whose little hands and face and knees would sometimes get so black you would wonder if they would ever scrub clean again . . . whose colds you worried so over and got up many times during the night to see if he was covered, and wondered what you would do if his fever went up much farther, knowing your purse wouldn't stretch to include doctor's calls.

And looking at those golden curls and that so fair skin, wondering (in your own secret heart) how anything so beautiful happened to come to you!

Honestly, it's hard to enter the portals of a place marked "Funeral Home" and walk down quiet, empty aisles to a small white casket and look at that child of white marble.

You feel too utterly crushed to weep. And then you feel: "This can't be so! It's only a hideous nightmare. Soon I'll awake and see him again."

Touch of a Little Hand

But you never do! You go quietly, if limply, through the whole dreamlike ordeal, because you are civilized and you know other parents go through it. If they can, you can!

But sometimes you feel you can't go on—that you must abandon yourself to wild grief. But somehow you don't.

THEN sets in the rest of your life—the common "every days" and you wonder how you can bear it. There's a very large chunk cut right out of your heart and, believe me, it does not heal. And you know it never will. Life can never again be completely happy.

You are never again quite free. Tears well at most unexpected times and places. But you must restrain them at all costs, because even a beast will hide its cuts and bruises from the world by dragging its injured body to its lair and licking its wounds.

Oh, those nights! You witness that accident 10,000 times! Your body aches because you can't drive from your mind's eye those wheels going over that tiny body and you pray God it didn't hurt too much. You wish you could have borne the pain for him. You will, the rest of your life.

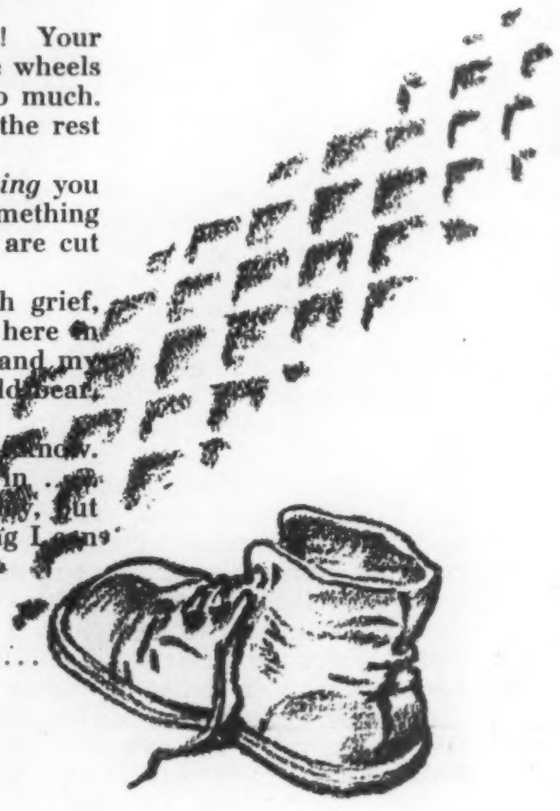
Then you think and think—wondering if there isn't *something* you can do to help a cause that something *must* be done about. Something must be done because every day children or parents or both are cut down.

Such needless slaughter in a world already saturated with grief, bloodshed, and death! With each year an army killed right here in our own country! Something must be done! Your little girl and my little girl must not be sacrificed. It would be more than I could bear, it seems, to lose another.

This is the first letter I have ever written to some one I do not know. But because my boy is always on my mind and your letter fitted in . . . well, here it is—unplanned and poorly done. I have no money, but I'm strong and could work hard. So please, if there is anything I can do along these lines, inform me.

Best of luck to you, and may God protect your little girl.

(Signed) Mrs. R.....



FOOD FACTS and FALLACIES

By RUSSELL M. WILDER

MANY YEARS AGO, as a student in Heidelberg, I read an essay by a famous physiologist which dealt with the borders of the realm of science. As I recall it the domain of scientific knowledge was symbolized by an ancient kingdom. There was a central capital; a limited region round about was well ordered and habitable and surrounding this was a dense forest. This forest was haunted by goblins. Some of these were only fantasies, figments of the imagination of the inhabitants of the cultivated part of the land; some in truth were mischievous demons. A number of highways radiated from the capital, but although they were conceived with the military purpose of ultimate extension to the borders, they mostly ended where the forest began, and beyond their endings few men dared to venture.

Consider the effect on this kingdom of science that came from the pioneer efforts of Louis Pasteur. The path he blazed through the forest of ignorance has been widened and straightened by the scientists who followed him and now has been converted into a highway which is paved and illuminated as far as the frontier. Mankind thus has been protected from most of those diseases caused by parasites. In consequence the pestilences of the past no longer haunt us; childbed fever has lost its terrors, and the mortality of infants has fallen dramatically. In consequence also, surgeons operate safely, and public health campaigns are ordered with such assurance that most of the so-called infectious diseases in time undoubtedly will be eradicated from the earth. I have in mind such diseases as yellow fever, typhus fever, hookworm disease, tuberculosis and syphilis.

Sometime after Pasteur another path was blazed through the jungle, and this now is being widened, straightened and lighted into a highway. Eijkmann in the Dutch East Indies observed the weakened legs of chickens fed with polished rice and showed that giving the hulls of rice would cure the malady. That was pioneering. Along the trail came Takaki, who eliminated from the Japanese navy the disease known as beriberi. He was followed by Pekelharing in Holland, by Hopkins in England, by Stepp in Germany and by numerous others, including a young Pole, Casimir Funk. In Funk's paper, published in 1911, entitled "The Etiology of Deficiency Diseases," there appears for the first time the word "vitamin," applied to a substance Funk had extracted from rice hulls, with which polyneuritis in fowls and beriberi in man could be cured. The blazing of the trail was completed, and road building began. Knowledge which previously had been developed was incorporated in the new nutritional highway, knowledge of calories, of mineral materials and of the relative value in nutrition of different proteins; already, in a space of time shorter than the lives of most of those who read this article, firm foundations have been constructed and the more dangerous turns of the road have been permanently eradicated.

With this highway safe for travel the next thing to be done was to tell the people about it, to convince them of its stability, to provide rules of the road which would insure safe driving and prevent jaywalking. The telling has been undertaken with unlimited enthusiasm but not always by those best qualified and too frequently by men whose interest was motivated by the commercial advantages obtainable. Promoting the vitamins, indeed, was done with such a blaring of trumpets that cautious men, including many physicians, who had the real interest of the public health at heart, became fearful that more harm than good would result. Their cautiousness has aroused the undeserved resentment of some of the experimentalists in nutrition. Physicians have learned from bitter experience to be critical of new knowledge pertaining to health. Their fingers have been burned too often.

Not more than thirty years ago, when knowledge about parasitic disease had reached a stage of development comparable to what now is known about nutrition, there still were surgeons and other educated people who pooh-poohed the germ theory. I well recall the extreme disgust with which an orthopedic surgeon, having completed the manipulative care of a fracture in a case also requiring blood letting, would call on his junior associate to perform this part of the treatment and say to us students on the benches, "This job is one for a 'sterile' surgeon." I remember too how shocked we were that an older general surgeon refused to have anything to do with rubber gloves and the then still new ideas about asepsis. Even today the public has much to learn of the dangers which lurk in unpasteurized milk and of the wherefores of public health measures. In certain quarters there is still opposition to compulsory vaccination. It is not surprising therefore that many educated men and women are meandering in the dark bypaths of the forest of ignorance, big, broad and well lighted as the highway of nutrition has become.

The task which today confronts those who are interested in the public health differs in many respects from that which was accomplished by our fathers and grandfathers. It was possible to provide by legislation for protection against infectious disease, and the number of people that needed to be educated about sanitation was relatively small. In matters pertaining to diet, legislation can help much less, and progress must depend on *universal* education. Yet under the present system of economics, most persons will get from commercial advertising most of their information on foods; and this by its very nature cannot be disinterested testimony.

To meet the problem of mass education in matters of nutrition, the Council on Foods of the American Medical Association was organized. At first it was called the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association. The pages of popular magazines and newspapers were filled with advertisements of food products. The growers, producers and distributors of such products had learned the value of the health appeal. Great campaigns were promoted by cooperative organizations in favor of meat, flour, vegetables and other natural foods as well as of packaged and prepared foods, with or without additions of minerals and vitamins. Copy writers were especially alert to dramatize the interest in vitamins, but proteins also received attention as well as calories "for energy," iodine to "prevent goiter," iron to "combat anemia" and other minerals for other purposes. It seemed that some authoritative body was needed which could pass judgment on food products and food advertising and that thereby the mass education effected by advertising could be guided so that truthful information would be disseminated. The power of advertising is terrific. "It speaks, and the whole world listens." The money spent annually exceeds a billion dollars, and the advertising of foods represents a substantial part of it. If this tremendous power could be turned to the socially useful purpose of disseminating truthful information about foods, it might not be impossible to make our people the healthiest and most vigorous men and women the world

has ever known. On the other hand, like a sales tax the cost of food advertising is borne chiefly by those who can least afford it, and to assess them for the disadvantage of receiving misinformation is to add insult to injury.

The members of the original committee on foods was selected by the Board of Trustees of the American Medical Association. Acting on advice received from the Council on Pharmacy and Chemistry they chose members who were outstanding authorities in nutrition—biochemists, physiologists, pediatricians and physicians. Somewhat later the committee was reorganized into the present Council on Foods, whose membership is as follows:

A full-time Secretary, Franklin C. Bing, A. B. (Pennsylvania), Ph.D. (Yale), formerly a teacher of nutrition and biologic chemistry, Western Reserve University.

Joseph Brennemann, M.D., Chief of Staff, Children's Memorial Hospital, Chicago.

Edward M. Bailey, Ph.D., Chemist in Charge, Connecticut Agricultural Experiment Station, and a member of the Food Standard Committee of the United States Department of Agriculture.

George R. Cowgill, Ph.D., Associate Professor of Physiological Chemistry, Yale University.

Morris Fishbein, M.D., Chairman of the Council, and Editor of HYGEIA and *The Journal* of the American Medical Association.

Philip Charles Jeans, M.D., Professor of Pediatrics, University of Iowa.

Howard B. Lewis, Ph.D. (Yale, 1913), Professor of Physiological Chemistry, University of Michigan, and one who has long been occupied with studies of metabolism.

James S. McLester, M.D., author of a standard monograph on "Nutrition and Diet," Professor of Medicine, University of Alabama, and Past President (1935-36) of the American Medical Association.

Lydia J. Roberts, Ph.D. (Chicago), Professor and Chairman of the Department of Home Economics, University of Chicago.

Mary Swartz Rose, Ph.D. (Yale), author of standard monographs of nutrition and Associate Professor of Nutrition, Teacher's College of Columbia University.

Russell M. Wilder, M.D., Professor of Medicine, Mayo Foundation, Mayo Clinic.

Manufacturers of food products, distributors and others interested in the promotion of natural or processed foods for which claims are made in relation to the promotion or maintenance of good health are asked to present to the Council not only the product but also the advertising material used for advancing sales; and if these conform to certain standards the product is accepted as complying with the rules of the Council. Acceptance is necessary before any food product may be advertised in any of the publications of the American Medical Association. The product also will be listed in a book to be published on "Accepted Foods," and the manufacturers are allowed to display, on the package label and in accompanying advertising matter, the Seal of Acceptance, which indicates that the product and advertising have been accepted.

A number of great advertising agencies and many manufacturers early indicated their willingness to cooperate, and now the number of food products which have earned the right to display this seal is impressive. An enormous amount of advertising literature has been reviewed and approved. Some idea of the extent of this work is illustrated in the accompanying table, which was taken from a report made in 1933:

Total products accepted	1,032
Products accepted during 1932	510
Total products rejected	41
Products rejected during 1932	16
Withdrawals during 1932	16

Much of the labor of the Council may go unrecognized because it consists of the elimination of misleading health claims before they appear in the printed advertising. A great deal of advertising literature, particularly that prepared in the form of educational charts, goes to schools, and the importance of the reviewing and revising that this material receives cannot be overestimated. Many school teachers have learned not to use matter for display which does not carry the Seal. By these means those companies and advertising agencies which are willing to tell the truth about their products and thereby assist the cause of good nutrition are given a distinct commercial advantage.

The principal rule for consideration of a food by the Council is that no product will be accepted or retained when the manufacturer or his agent makes false, exaggerated or misleading statements as to its source, method of collection, preparation or value for nutritional purposes. Also, if it is the opinion of the Council that the general policies of a given firm are clearly detrimental to the welfare of the public, its products, otherwise unobjectionable, may be rejected. In addition, certain practices of unfair advertising are discouraged, especially

that of making disparaging statements about the wares of competing firms, whether or not the product of the competing concern has been accepted. The Council strives to be as impartial as possible and completely fair. It has no ax to grind, other than the interest of the public, and it holds the belief that what is being attempted should be as helpful to the food industry as to the consumer. Truthful advertising pays in the long run; what advantage can be gained by deception always is short lived.

The work of the Council on Foods and that of the councils supported by the American Medical Association for the consideration of drugs and of apparatus for physical therapy necessitates the employment of a staff of thirty-seven secretaries. The salaries of these secretaries, together with the necessary expense for office space and facilities, are assumed by the American Medical Association, whose burden is further increased by the fact that much advertising is lost to its publications because of products which fail to meet the standards set by these councils and which consequently are not permitted to advertise in any of its journals. No remuneration of any kind is received by the members of the councils, and the impression that the councils ever are influenced in deciding on a product by whether or not it is advertised in these journals is false. No member of these councils would continue to serve if there were the faintest truth in such an allegation. The idea is preposterous.

The work of the Council on Foods has increased to such an extent that certain types of foods, especially natural foods, cannot receive consideration. Several classes of products, formerly accepted, have had to be removed from the list. Among them is bread. During the past year the list of "exemptions without prejudice to the products themselves" has been extended to sausage; dyes for coloring foods and Easter eggs; ice cream, sherbets and ices; eggs; fresh fruits and vegetables; spices and condiments, sauces, pickles, vinegar; catsup, table salts other than iodized salt; salted peanuts; butter; candy, honey, popcorn; ordinary fluid milk, and dairy orange drinks and tomato juice distributed in milk bottles by dairies. Products falling into the foregoing classes, which have a nutritional value greater than usual products of the class or *(Continued on page 642)*

TODAY'S HOUSEWIFE DOES HER PRELIMINARY SHOPPING IN THE ADVERTISING COLUMNS BEFORE MAKING HER PURCHASES AND SERVING HER FAMILY. AND SO SHE MUST EITHER LEARN TO DISCERN THE TRUTH FOR HERSELF OR FIND A RELIABLE MEDIUM FOR GUIDANCE, SUCH AS THE SEAL OF ACCEPTANCE.

LYING

***HERMAN M. JAHR** contributes the third article in this series, "Bad Habits in Good Children"*

THE CHILD IS A NOTORIOUS BUILDER OF CASTLES IN THE AIR. MOREOVER, THE FLIMSIER THEIR STRUCTURE, THE GREATER HIS FASCINATION.

THERE IS an old saying that children and fools cannot lie. Those who study the various developmental phases of childhood have long been impressed with the significance of this saying. Contrary to popular interpretation of the motives of "innocent childhood" the inability to lie is due to social immaturity rather than to moral scruples. Indeed the child, until the adult imposes on him a sense of ethical obligation, is blissfully devoid of morals.

Every normal human being is endowed with imaginativeness. This trait begins to assert itself about the age when the child becomes interested in objective play. Thus we may watch the little girl talking to her doll, whom she imagines to possess animate characteristics. In like manner her brother bestows living qualities on tin soldiers whom he exterminates with his pop-gun as many times as his imagination desires. Imagination based on the abstract comes slowly and usually assumes wishful qualities. The child is a notorious builder of castles in the air. Moreover, the flimsier their structure the greater is his fascination. Who but a child can share the joys and sorrows of the characters in the time-honored fairy stories?

There are times indeed when the youngster finds himself confused between his imagination and reality, particularly when his imagination carries him to surroundings that are pleasanter than those of his real habitat. It is this inability to distinguish between his wishful thinking and his surrounding reality that so often results in what adults interpret as lying. Overemphasis on this trait frequently puts a premium on his "lying" by the attention it brings. Gradually, lying becomes a habit.

At 10 years of age, Bruce was, according to his mother, "the biggest liar" she had ever seen. At 2 years he would insist that some one else, not he, had wet his bed. When he was old enough to play with other children he would come in with impossible tales of adventure. As he grew, the lies grew with him in number and intensity. The habit became annoying when, as a result of this ignoble trait, neighbor became involved against neighbor. Bruce proved a veritable nuisance by carrying gossip from one household to the next. The climax came when, for no apparent reason, he circulated a story reflecting on the honor of his own family. His father, he told an admiring friend, had come home drunk, and in a scuffle with his wife sustained a black eye. That his father actually had some bruises on his face at the time was unfortunately true. He had stepped on icy pavement and had fallen against the bumper of his automobile. The boy was there when it happened. The story, as neighborhood stories usually run, came back first to Mother and later to Father.

Bruce was a fine looking lad, well developed for his age. He was doing excellent work in

school and had many friends. When asked about his tall stories he smiled somewhat sheepishly and replied, "I can't help it if I am that way. Everybody tells lies sometimes." As to the black eye episode he hung his head and merely mumbled that he was sorry. Subsequently he confessed that a boy in the vicinity, apparently the object of his admiration, always boasted about his "old man's" escapades. Here was an opportunity not only to match his friend's accounts but indeed to "go him one better." It was too commonplace to have the husband beat his wife. The reverse process, even if not factual, seemed more adventurous.

Fortunately it was possible for the physician who was interested in the case to make the parents realize that the boy was far from being a lost soul doomed to a career of dishonesty and failure. At the present time, Bruce is attending college. During his school years he made excellent contributions to the school journal. He not only can tell stories but is equally capable at writing them, and he will probably be a success as a novelist. Whether he was born with an unusually keen imagination or whether the worrying disposition on the part of his parents served as a stimulus to this trait is difficult to estimate. A problem, however, he is not.

With Lucy Hays the situation was different. When first brought to a physician for observation she was 8 years old, and her mother stated that the child never uttered a word of truth. Mrs. Hays is an uneducated, flighty young woman who has no patience with her daughter. "Sometime we beat her until she is black and blue, but it does no good. She goes on lying just to spite us."

A conference with Lucy revealed many interesting phases of her home life. Mrs. Hays particularly was given not only to exaggerations but to prevarications as well. When called on by the doctor to explain contradicting statements made on previous visits, she attempted to lay the entire blame on her daughter. As the study of the case proceeded, it became apparent that the girl's lies were often used to cover parental indiscretions, not infrequently under maternal or paternal threat, as the offending occasion required. What wonder that Lucy lied when her life was in constant bewilderment and confusion! She is a good child, born and reared in an unfavorable environment. Whether through the little help that is now afforded her she will be able to conquer her adverse surroundings it is too early to predict. Present indications point in her favor. She takes great pride in teaching her parents the virtues of veracity—an unusual task for a daughter of 10 years but under the circumstances an urgent educational need.

There are times when a youngster fears to tell the truth lest he be punished. A 4 year old child is warned that if she crosses the street alone she may be hurt by a passing motor car. She is further given to understand that if such warning is ignored she will have to be spanked. On the inaccessible corner is her playmate. Unless there is an escort to conduct the child across the thoroughfare she is forced to remain away from her companion or accept punishment. Now a child's philosophy of life is extremely simple. He lives in the present. The future, immediate though it may be, does not concern him. The little girl sees an opportunity for pleasurable activity. A few minutes later her mother finds her across the street. "Did you cross by yourself?" she asks. "Yes." In fulfilment of the threat the child is spanked. As a result of this procedure one may expect the development of one of three situations: The child may learn to ask for help in order to reach her playmate; she may abstain from group play if an escort is not available at the moment, or she will cross the street alone and later deny it. Certainly she will do everything possible to escape punishment. Actually therefore the little girl cannot be condemned for falsifying her act. Many adults resort to "white lies" under less provocative circumstances.

The three cases thus far cited illustrate the mechanism whereby lying develops into a habit, and in each of these instances the parents are distinctly, even though innocently, responsible for promoting it.

Thus Bruce was born with an unusual imaginary capacity. Mother and Father at first laughed at their son's stories. When the boy's talent began to inconvenience them the little fellow was branded a liar. They called him Baron Munchausen. In college he is still known as the "Baron."

Lucy's lying was fostered by foolish parents who, let us say charitably, had no inkling of the impression they were creating on their young daughter. But the child has retained a deep feeling of loyalty in spite of the severe beatings she received as a result of her poor training.

In the third case the little girl who risked

her life running across the street in the midst of traffic was punished several times before she realized that she would have to change her procedure. On one occasion she was found in the act of crossing the street alone. When taken to task she became terrified and in all her childish innocence asserted that she was on the way to ask her companion's older sister to lead her across. On another occasion she asserted that the postman acted as her escort, and without provocation amended her explanation, "I won't do it again." It took many days to convince the child that such fabrications were futile. Gradually she learned to apply to authorized persons for help until she became old enough to rely on her own resources for safety.

The three types thus far enumerated constitute a benign problem, as they are amenable to correction. The two additional types that follow are of a more serious nature and at times require extensive sociologic and psychiatric care.

John Chase is 12 years old. He has been a source of worry to his parents for at least six years. Of late, worry has given way to anxiety. He lies constantly, even when telling the truth is to his advantage. In addition, he has little or no regard for other people's property. When taken to task for his misbehavior he appears remorseful and promises to improve. These promises, however, are soon forgotten, and the next scrape appears more ominous than the last. His difficulties in school are getting increasingly embarrassing to teachers and parents alike. He is an inveterate truant.

On the first visit to the physician who is trying to help solve his problems, John was unapproachable. He answered questions in monosyllables and occasionally in short sentences, denying every statement made by his mother, his teacher and the school nurse. "Every one picks on me," and "Why don't they let me alone?" As the visits are repeated the boy is becoming more communicative. "Whenever anything happens," he says defensively, "right away they blame it on me." Other members of the household, it appears, prevaricate with impunity. As to the money occasionally missing from his mother's purse he has some ideas about it, "But I ain't accusing nobody. I'm no snitch."

It is a well known fact that parental disharmony is one of the most prominent causes of juvenile misconduct. Whether among these unfortunate youngsters, lying and stealing constitute a protective effort against their feeling of insecurity, or whether these anomalies in behavior are unconsciously designed to divert the interest of their quarreling parents; whether one or both of these mechanisms for self preservation operate, the fact remains that domestic bickering predisposes to asocial conduct of the child.

Thus it is with the Chase family. Father and Mother resent each other. Mr. Chase had sacrificed a professional career for marriage eighteen years ago. His family had enjoyed no minor social standing, and his elopement with a girl of poor connections was a severe shock. Although they ultimately accepted their daughter-in-law, the girl in turn felt that this acceptance was a form of patronage, and she "despised the whole snobbish outfit." The young husband found employment, and the couple started keeping house according to prevailing fashion. The elder Mrs. Chase took matters in hand. If her financial aid was light her ideas on how to run a house were bountiful. Hatred between the two *(Continued on page 655)*

Swimming Lesson

Once by a pond I saw a frantic hen,
Who'd mothered ducklings, cluck in terror when
Her downy children, tired of awkward feet,
Launched their plump bodies like a yellow fleet.

Now, by the lake I sit with anxious eyes
Watching my son grow bold and water-wise;
And though my lips say not a single thing,
My heart is loud with clucks and fluttering.

By VIRGINIA BRASIER

The Flight of the Snowbirds

A Boy—A Boat—A Breeze—
A jolly trio these—says

ALBERT SOILAND

DURING THE PAST few years, Newport Bay, California, has emerged from a small, shallow lagoon into a wide, land-locked, amply dredged recreational harbor, the first harbor of this type in the United States, and facilities for water sports of all kinds are now available for the community.

The interest which the younger generation is taking in small boat sailing is an invigorating thing to behold, and the rapid development of the snowbird class at Newport Harbor has encouraged the yacht club to bring into being a new junior division having its own membership and officers as well as its own separate clubhouse. These juniors are directed in their activities by the senior club and conduct their own meetings, arranging their own week-end and seasonal race programs. They may be seen in action at any season of the year whenever free days and school holidays permit.

To watch these youngsters scrub, polish and handle their little ships is an inspiration even to the saltiest of old salt tars, and many a proud papa and mama beam with happiness when their little boy or girl returns as the winner in the race.

When the winter racing and cruising season has finished and the long summer vacation begins, the bay literally hums with activity—spring overhauling is under way with a bang. The snowbirds are hauled up on the beach, bottoms are scraped, seams caulked and hulls painted. The insides are scrubbed, dried and painted, the little forward decks and rails are varnished, and masts are scraped and finished. Finally sails, halyards, rigging and lines are repaired or replaced, and into the water they go—spick and span and good as new, ready to challenge the world, one and all.

In 1930 the first scheduled flight of the snowbirds took place at the opening of the summer season, and it was so successful that the junior club decided to make it an annual

Kent Hitchcock

THE SNOWBIRDS MAKE THE TURN AROUND A MARK ON THE COURSE DURING ONE OF THEIR ANNUAL RACES.

event. Thirty-nine birds went over the line in the 1936 race, and 1937 found seventy-four awaiting the timer's gun.

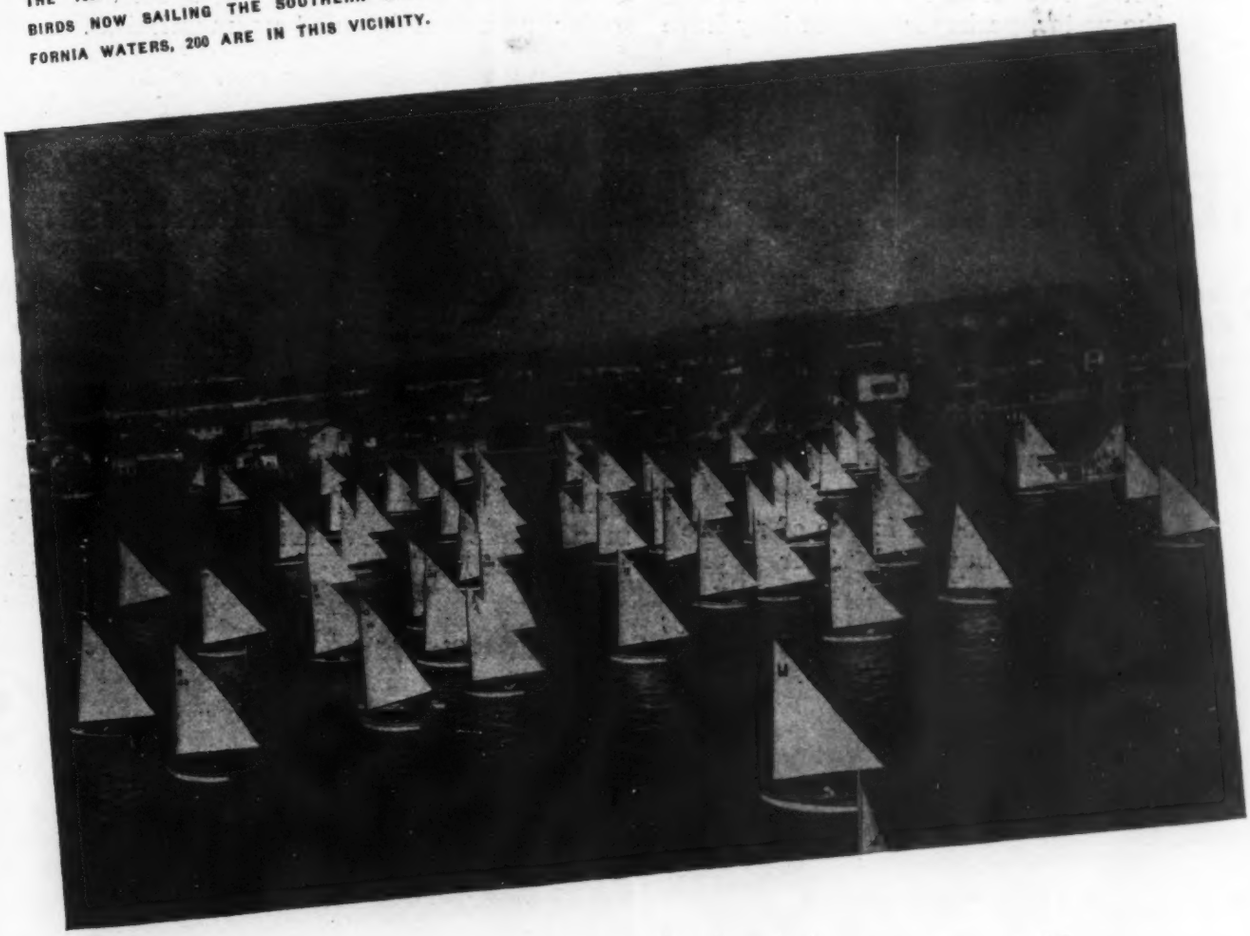
The man power of the snowbird is limited to two—one skipper and one "crew." The ages run from 8 to 18, with a goodly sprinkling of girls both as skippers and as crew. Usually by the time these youngsters reach 15 or 16 they have graduated into the higher grades, larger sloops, international star class sloops, or international 6, 8 or 10 meter boats. It is interesting to record that quite a number of snowbird class graduates have made good in local, national and international race meets of all classes and that several world's championship trophies have been brought out to the west coast by these fine, sturdy sailor lads and lassies.

The snowbird itself is a small 12 foot open dinghy with center board, single mast and one sail—catboat style. It has a small rounded deck forward, is quite broad—has a wide beam, in sailor's vernacular. The boats are safe, seaworthy and unsinkable and of local design and construction. They were the type of boats selected to represent the monotype race event in the Tenth Olympiad Games held at Los Angeles in the summer of 1932.

There are approximately 350 snowbirds now in commission within the coastal waterways of Southern California, out of which number approximately 200 make their home on Newport Bay. The waters are not always as placid as is depicted in the 1937 annual flight. During the July and August series the brisk sou'westerly trade winds test the mettle of both ships and crew. Not infrequently, under such conditions, a little sloop will capsize and its intrepid skipper and crew get an unexpected ducking. This usually happens when the helmsman is sailing tight on the wind and does not luff sharply enough or fails to ease the main sheet when a sudden gust unexpectedly slaps the boat over on its side. Even when an upset occurs, quick work may save the boat from disqualification if the submerged crew clambers over on the weather side and puts their combined weight on the center board, giving a mighty heave on the rail, which may right the boat; then they bail out and continue on their course.

Such episodes are by no means unusual and add considerable excitement and interest to the race. If, however, the boat is not righted quickly, the sail becomes so wet and the boat

THE SNOWBIRDS ARE SHOWN HERE IN THE 1937 ANNUAL FLIGHT. OF THE 350 BIRDS NOW SAILING THE SOUTHERN CALIFORNIA WATERS, 200 ARE IN THIS VICINITY.



so filled with water that it must ignominiously be towed to the beach for reconditioning. And do the rest of the sailors feel sorry for their unlucky comrades? Not by a jugful! "It serves them right!" "They should know better!" "No excuse whatever!" "Why, every sailor should keep his eye to windward and be ready to meet any sudden squall and beat it at its own game!"

And so the comments run, for it is true that a quick eye and proper balance of the boat's trim, together with the right action at the right moment, will prevent just such a spill which, if it happens to the leading boat, invariably costs him the race. Do such incidents mitigate against the sport? Not in the least. It takes a good spill or two to teach the embryo skipper how to avoid such catastrophies in the future.

There is an old saying that one never catches a cold when immersed in salt water. This is, of course, stretching the truth, but nevertheless the activities connected with sailing and racing boats on open salt water build up a vigorous tone to the whole physical and mental structure of the individual. Healthful exercise in clean, fresh air helps to establish a bodily resistance to cold infection as well as to practically all the respiratory agencies of disease. I have spent innumerable week-ends, winter and summer, on Newport Bay, where I have seen pale and puny youngsters, at first unable to swim and afraid of the water, perhaps because they have lacked earlier opportunity to come into direct contact with it, undergo an unbelievable physical transformation even in one short season. The pallor gives way to a healthy tan; the sickly little body rounds out; a sturdy frame replaces a delicate one, and a muscular physique comes into being by virtue of swimming, canoeing, rowing and sailing.

As an interesting example, take the case of one young man who first came down to the bay about ten years ago to race his sloop, a starboat. He was about 20, gaunt, long and lean, pale faced and somewhat stooped, with a rather inoffensive but more or less persistent cough. He raced during the summer seasons and went into the interior during the winter months. For the first two years but little perceptible change was noted in his general appearance; after the third season of sailing, however, he began to take on weight, became more interested in his sailing, graduated into the 6 meter class and from then on began his racing career in earnest. Today he is a veritable athlete of splendid physique and appearance. In recent years this young man has won first place in numerous local and national race events and is now looked on as an authority on things nautical. Such examples as these keep up enthusiasm in yachting, one of the cleanest and most healthful of sports, exempt so far from the stigma of commercialism.

HEALTHGRAMS *from articles in this issue*

¶ It cannot be said that poisons inevitably have ill effects, for many organisms could not live without using poison. *See page 605*

¶ Any person who needs a drug to put him to sleep needs to see a doctor first. *See page 582*

¶ Cold water in hot weather is one of nature's most blessed boons, but cold water applied suddenly, either externally or internally, is shocking. *See page 586*

¶ Truthful food advertising provides people with the information they need in order to understand nutrition, and better nutrition unquestionably will benefit our people immensely. *See page 628*

¶ The one way to eliminate accidents at grade crossings is to eliminate the crossings. *See page 623*

¶ Colored glasses worn constantly, in which too much visible light has been absorbed, prevent the muscles of the eye from remaining healthily active, and the eye becomes dependent on absorptive glasses. *See page 591*

¶ The most important time of all for the busy man to take recreative exercise is when he has no time for it. *See page 602*

¶ The three C's which serve as guideposts to the proper care of milk in the home are these: Keep milk cold, clean and covered. *See page 608*

¶ The man who knows he is limited by heart disease and appreciates this disability may actually live longer and more happily than the normal person who does not take care of himself. *See page 594*

Do You Know Your Onions?

Their numerous varieties provide the seasoning ground for all nations, says
HARRIET MORGAN FLYER

A STANDBY in the cookery of all nations is that most important seasoning—onion and its relatives, leeks, garlic, scallions, shallots and chives. People with different backgrounds, different living habits, different ways of cooking and varied tastes find a meeting ground in the use of onion as a seasoning in cooking. The very name of the onion tells of its universality. Strangely enough, the word comes from the Latin word *unio*, meaning unity.

For 4,000 years, man has cultivated the onion as a food. The common onion is native in western Asia, growing wild from Palestine to India; but it is familiar also to China and Japan. Wherever man traveled, he brought the onion with him. All Europe knows it, as do North and South Africa and of course our own land.

The ancient Egyptians venerated onions and garlic, calling them to witness their oath as gods:

> 'Tis mortal sin an onion to devour,
> Each clove of garlic is a sacred power.

The Israelites in their wanderings in the wilderness longed for the Egyptian leeks, onions and garlic. Thus they complained to Moses:

> We remember the fish, which we did eat freely in Egypt, the cucumbers and the melons, and the leeks and the onions and the garlic.

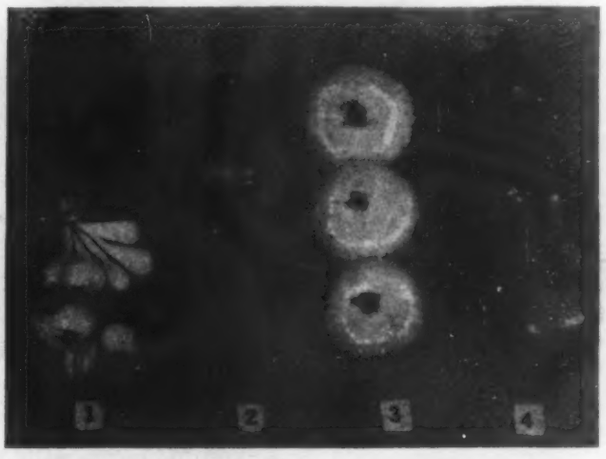
Leeks have been an emblem of Welsh principality as far back as we can trace their history. Welsh soldiers wore leeks in their caps as a symbol of distinction. In the play "Henry V," Fluellin, addressing the king, observes:

> . . . if your majesty is remembered of it, the Welshmen did good service in a garden where leeks did grow, wearing leeks in their Monmouth caps; which, your majesty know, to this hour is an honourable badge of the service; and I do believe your majesty take no scorn to wear the leek upon Saint Tavy's day. . . .

Almost from prehistoric times, plants of the onion tribe have been regarded as medicinal agents. The great Hippocrates has particularly celebrated their medicinal properties in several diseases. The Greeks considered onion and garlic as "heroic" medicaments. For centuries, garlic was thought to be a certain antidote against "contagious fevers." Galen, a Roman physician who died in the year 193 A.D., called garlic "the country-man's treacle" (antidote). As late as 1725, Bradley wrote in his "Family Dictionary," "To eat garlic is the treacle of the country people in the time of plague and other dangerous diseases, and even against all sorts of poisons." The "onion poultice" was long held to be efficacious in the treatment of earache, colds and other complaints. Onions were considered second to none as a remedy for persons afflicted with scurvy, a disease caused by the lack of vitamin C in the diet.

Even though the medicinal properties formerly attributed to onion and garlic have been discredited, they still are regarded as useful adjuncts to the diet. Onions are a good source of vitamin C and contain vitamins B and G as well. They also furnish some minerals which are essential to an adequate diet.

Today the onion is listed among the country's foods of first importance. Onions may be purchased at the market the year round. At seasons when other vegetables are scarce or high priced, onions are in the low-cost vegetable



SCALLIONS (1) ARE EATEN RAW; WHILE THE YELLOW GLOBE (2) IS TOO STRONG FOR ORDINARY PALATES. THE BERMUDA (3) MAY FIND ITS PLACE UNCOOKED ON A HAMBURGER, BUT THE RED WEATHERSFIELD IS TOO PUNGENT, SO MAY BE BOILED, BAKED OR FRIED.

R. I. Nesmith

IN AN ONION MARKET THE ADVENTUROUS COOK WILL FIND THE RAW MATERIAL FOR COUNTLESS DESIRABLE DISHES TO SERVE SOME ONE'S JADED SUMMER APPETITE.

class. There are several kinds of onions and one or more varieties are available each month of the year.

Winter storage onions include both the most potent and the mildest flavored types of onion. The strongest flavored varieties are the Yellow Globe, the Red Weathersfield and the Prizetaker Southport White Globe. They usually range from 1¾ to 2½ inches in diameter. Their flavor is generally regarded as too pungent for eating raw, and they take their prime place on the menu as a vegetable boiled, baked or fried.

The mildest flavored onions are the sweet Spanish type like the Valencia. They grow large: A slice measures sometimes as much as 4 or 5 inches across. These onions are eaten raw in sandwiches and salads.

From April to July, Bermuda onions are on the market. Bermuda onions, which come not from Bermuda as the name suggests but from Texas and the Choachella Valley of California, are recognized by their flat shape and silver color. This onion is mild in flavor and is usually eaten raw.

Aside from the potato there is no vegetable more continually in demand in the kitchen than is the onion. An onion in its native simplicity, braised, boiled or fried, is the delight of many on a cold winter's day. Some cooks stuff onions and bake them in a casserole. French restaurants make baked-onion soup, for which a special patronage has arisen. German restaurants fry them in deep fat as an accompaniment for hamburger. Onions boiled or creamed appear frequently on home and hotel menus.

The strong smell and taste of onions, as of the garlic and the leek, are due to a pungent, volatile oil, rich in sulfur compounds. One method of ridding onions of their strength and acridity is to cook them. As Dean Swift humorously puts it:

> This is every cook's opinion,
> No savory dish without an onion,
> But lest your kissing should be spoil'd
> Your onions must be thoroughly boil'd.

Cooking drives off the volatile oils which contain the aromatic compounds that give onions their pungency. For this reason, onions should be cooked in an uncovered kettle.

Small green onions, scallions, are the strongest of the onions usually eaten raw. They find their spot on the appetizer tray or in salads and sandwiches. They are on the market from January to June.

The leek—long known as the principal ingredient of Scottish *Cock-a-leekie*, a soup made of fowl boiled with a profusion of leeks—is a variety of onion, resembling the scallion but larger in size and sweeter in flavor. Unlike scallions, leek tops are tender and mild. When stewed, seasoned with butter, salt and pepper and served on crisp toast, they make a delicious addition to the steak dinner or to a dinner featuring roast chicken or duck. Many who frown on salads with green onions will welcome the same salad mixture when sliced leeks are used instead. Almost all year, bunches of leeks, looking like overgrown green onions, may be found in the markets.

Shallots are a milder, smaller type of green onion, without the bulb development which the scallion has. Epicures consider the shallot to be the best possible seasoning for entrées and savory dishes. It is generally preferred for preparing highly flavored soups and sauces. A recipe for shallot broth is given by Gilbert in the "Bab Ballads":

> So he boils the water, and takes the salt,
> And the pepper in portions true,
> And some chopped shallot (which he never forgot)
> And some sage and parsley too.

Shallots are available on the market from September through February.

Chives are tiny little onions whose green tops chopped finely add that touch of delicate flavor to salads and cheese mixtures.

Garlic, a vegetable much used in France and Italy as a condiment and seasoning for all kinds of dishes, has been scoffed at by the English. In Queen Elizabeth's time the word "garlic-eater" was used to signify a mean fellow. Garlic, if used with great discretion, is an excellent addition to many dishes. Tiny slivers of garlic inserted in a leg of lamb before roasting help the flavor wonderfully. Lamb chops or steaks dipped in oil in which has been crushed a garlic clove just before broiling are delicious. A morsel of garlic in French dressing increases the savor of the dressing and adds that needed zest to many vegetable, meat and fish salads. When using garlic as a seasoning, remember that garlic has an onion flavor magnified several times plus a pungency all its own, so always use less than your first inclination. The relative potency of garlic, leek and onion is expressed in this old English rhyme:

> If Leekes you like,
> But do their smelle dis-leeke
> Eat onyuns, and you shall not smelle the Leeke.
> If you of Onyuns would the scent expelle
> Eat Garlicke, that shall drowne the Onyun's smelle.

The judicious use of this number one seasoning family—onions, leeks, garlic, scallions, shallots and chives—has rescued many a low cost menu from monotony and tastelessness. Their flavor transforms otherwise dreary food into appetizing dishes. They give savor to salads, sauces and garnishes and are especially welcome in any household where food money must go far.

FOOD FACTS AND FALLACIES

(Continued from page 631)

which are promulgated with special claims, will be reported on when such action is considered desirable. The action of the Council in discontinuing consideration of the items named has had an interesting and promising sequel. A number of manufacturers of ice cream are considering the possibility of forming their own organization for inspection and control of their products and advertising. If the food industries generally could be persuaded to establish such self disciplining organizations, the entire field could be covered, and much more could be accomplished than the Council can do.

In addition to passing on submitted products, the Council reserves the privilege of publishing informative statements about foods of any kind, whether or not these are eligible for consideration or have been submitted. The privilege, as a general rule, is exercised only in the case of firms whose advertising is flagrantly deceptive. An example cited by the Council was Ovaltine, manufactured by the Wander Company of Chicago. In *The Journal* of the American Medical Association (Dec. 12, 1931) appeared a report by the Council from which I have taken the following excerpts:

> The advertising claims made for Ovaltine were that it was a "Swiss food discovery" and "a scientific food concentrate containing in highly concentrated form practically every single food element necessary for life" . . . "recommended by 20,000 physicians the world over . . . as a building and restorative food for convalescents and invalids; for stomach disorders and feeble digestion, for nervous and run-down conditions; as a means of inducing calm, natural sleep" . . . "actually makes children want to eat more — and increases the nourishment and digestibility of every bite they take."

The product, as advertised, was a concentrated form of malt, milk and eggs flavored with cocoa. The Council (then the Committee) found Ovaltine to be

> an example of the way in which our recognized foods are exploited like "patent medicines" to credulous and ignorant people. Here is the emphasis on impaired digestion, sleeplessness and nervousness; here again are the pseudo-scientific claims; here again the exploitation of a foreign chemist and the mystery associated with the type of advertising that was used to build "Sanatogen," the glorified cottage cheese, into America's most popular nerve tonic, more than a decade ago.
>
> To this is added the claim for vitamin content—quite likely its content of malt does assure a possible content of vitamin B—but what assurance has the user that the vitamin B that it contains is preserved unchanged? What assurance does he have that the vitamin D that is present is there in such amount as to be of any service whatever? There are now available in the open market, for those who wish to purchase beverages of this character, several products of known composition, advertised honestly, with claims based on their actual content. In contrast, Ovaltine is sold with grossly exaggerated claims; its composition is essentially a mystery to the public, and even if it did contain what the manufacturers say it does, it could not do the things the manufacturers say it will. The exploitation of Ovaltine represents a flagrant abuse of recognized principles in food advertising. It is in many respects not in accord with scientific fact, and therefore is misleading to the public." For these reasons the Committee on Foods makes available this statement and lists Ovaltine among the products not acceptable.

This is only one example of dozens of similarly plain-spoken judgments by the Committee, or later the Council. Among the products to be found nonacceptable was Fleischman's yeast, distributed by Standard Brands, Inc., New York. Numerous reasons were given. I quote only one paragraph of the decision. It appeared in *The Journal* (July 24, 1937):

> Illustrations of athletes are presented, with the comment that "their sturdy build shows they are abundantly supplied with the four important health-building vitamins: A, B, D and G." The use of the phrase "the four important health-building vitamins" would seem to imply that nothing else need be considered in the diet. No mention is made of vitamin C nor is any mention made of calories or protein or other dietary essentials or the countless other factors involved in the maintenance of good health in addition to the four vitamins A, B, D and G.

The objection in this case was to a sin of omission, the omission involving deception. Much else was found in the Fleischman advertising which was nonacceptable. The report continued:

> There are now available on the open market a number of fresh and dehydrated yeast preparations which are advertised conservatively with claims based on the actual composition of the product. Fleischman's yeast, in contrast, is sold with grossly exaggerated or unwarranted claims.

The Council's adverse decisions on Ovaltine and Fleischman's yeast and many other similar rejections do not imply that the products in question are not wholesome foods. The fault, in most cases of rejection, is in the advertising. Another example cited by the Council was Welch's certified, pure pasteurized grape juice. There are many nutritional advantages in grape juice. It is a pleasant wholesome beverage, a good source of vitamin C and of certain minerals, a very acceptable product. The Welch Grape Juice Company, however,

> leads the reader to believe that its product has specific properties for reducing weight, which is untrue; it cannot "burn up fat," and its sugar chemically plays the same part in metabolism as does any other available carbohydrate. Welch's is anything but "the big element in the build up diet of the child, comparable to mother's milk," as claimed. Its advertising is manifestly an artfully designed piece of deception to enmesh the credulous and those uninformed in nutrition and physiology, a hodgepodge of nutritional and physiologic chicanery, falsities, vagaries, misrepresentations and claptrap, a revival of the nostrum blurbs of the past.

These pleasant phrases are quoted from the decision. Perverse advertising of this character brings good advertising into disrepute and does harm to the majority of the food trade. The company, when informed of the opinion, failed to express willingness to accept the changes suggested, and therefore its product was rejected. Had it responded differently, the Council willingly would have assisted, as is regularly its custom, in the preparation of advertising which would be socially beneficial.

This brings up the subject of foods with therapeutic claims. The Council considers them separately, and believing that treatment of existing disease is a subject in which only physicians are competent to act, it permits such claims only when the advertising is limited to medical journals. The layman is cautioned to beware of so-called health foods for which the makers claim curative or health-giving properties. The Council has been explicit in defining the proper use of such terms as *health, healthful* and *wholesome.* It permits statements of well established nutritional or physiologic values of foods but considers the term *health food,* and claims or statements to the effect that a food gives or assures health, to be misinformative:

> An adequate or complete diet and the recognized nutritional essentials established by the science of nutrition are necessary for health, but health depends on many other factors . . . No one food is essential . . . and there are no *health foods.* The term *healthful* . . . as used, commonly means that the food described corrects a possible nutritive deficiency or some abnormal condition in such a manner as actively to promote health. It incorrectly implies that the food possesses unique (or unusual) health-giving properties . . . which makes its use in advertising . . . misleading.

Healthful and *wholesome,* by dictionary definition, have almost identical meanings; the former, however, carries an active significance, whereas wholesome indicates only that the food so described is sound, clean, fit for consumption and free of any objec-

tionable qualities. *Healthful*, therefore, is objectionable and should be replaced by *wholesome* in food advertising.

Advertising through the mails, although regulated by the rules of the post office, is difficult to control. "Sucker lists" are compiled by professional snoopers who sell them to the purveyors of nostrums for the exploitation of the sick. For instance, persons who have diabetes soon are found out by these vampires and from then on are deluged with intimate, solicitous letters advising a trial of this or that "cure," or the use of some so-called diabetic food. A general decision of the Council on so-called diabetic foods reads as follows:

There is authoritative evidence that commercially prepared special *diabetic foods* are of limited usefulness to the diabetic patient and that the availability of insulin makes them no longer necessary. Artificial substitutes for ordinary foods are not to be favored; it is much better for the diabetic patient to learn how to plan his diet with foods in common use and readily available. The diet should be exactly prescribed in carbohydrate, protein and fat and total calories.

The designation of a food as a *diabetic food* merely because it is low in carbohydrate is now unwarranted and misleading and gives the erroneous impression either that the food, taken in unrestricted quantities in diabetes, is harmless or that it has remedial action. Except for the necessity of restricting foods to avoid overstepping the food tolerance, there are no special diabetic nutritional requirements. The exploitation of starch-free or low carbohydrate foods containing an excess of protein for use by diabetic patients is unwarranted. Protein may be tolerated almost as poorly, if not quite as poorly, as starch in diabetes.

The Council does not limit its activities to criticism. Where popular prejudice is found to be injurious to the food industry an attempt is made to combat it. Such prejudice also is socially disadvantageous. In some cases it represents the survival of antiquated scientific opinion, but usually it has been built up by the preachments of faddists or by the advertising of competing foods. Specific instances of wholesome foods that have been hurt by such prejudice are oleomargarine and white bread. The Council has attempted, by publishing the true facts, to correct the false impressions. Thus several brands of oleomargarine bear its Seal of Acceptance, and much has been done to wear down the opposition to bread. I quote from Dr. Fishbein's comment on bread:

Before making a definite statement as to the actual value of white flour bread as contrasted with whole wheat, it should be emphasized again that neither white flour bread nor whole wheat bread constitutes a single article in diet for any intelligent person. As pointed out by McCollum, there are many reasons why the American can eat white flour bread satisfactorily. "White flour," he says, "keeps much better than whole wheat flour, and so can be handled with less commercial hazard. The American public likes white flour bread, and I do not see any reason," he continued, "why this taste should be disturbed. The important thing is to insist upon the consumption of a sufficient amount of what I have termed the protective foods — milk and vegetables of the leafy type—to insure that calcium deficiency, and the vitamin deficiency of white bread, will be made good." If baking technologic research is able to incorporate larger amounts of milk solids in the loaf of bread or otherwise to insure a sufficient amount of calcium and the important vitamins, even this charge cannot rest against white flour.

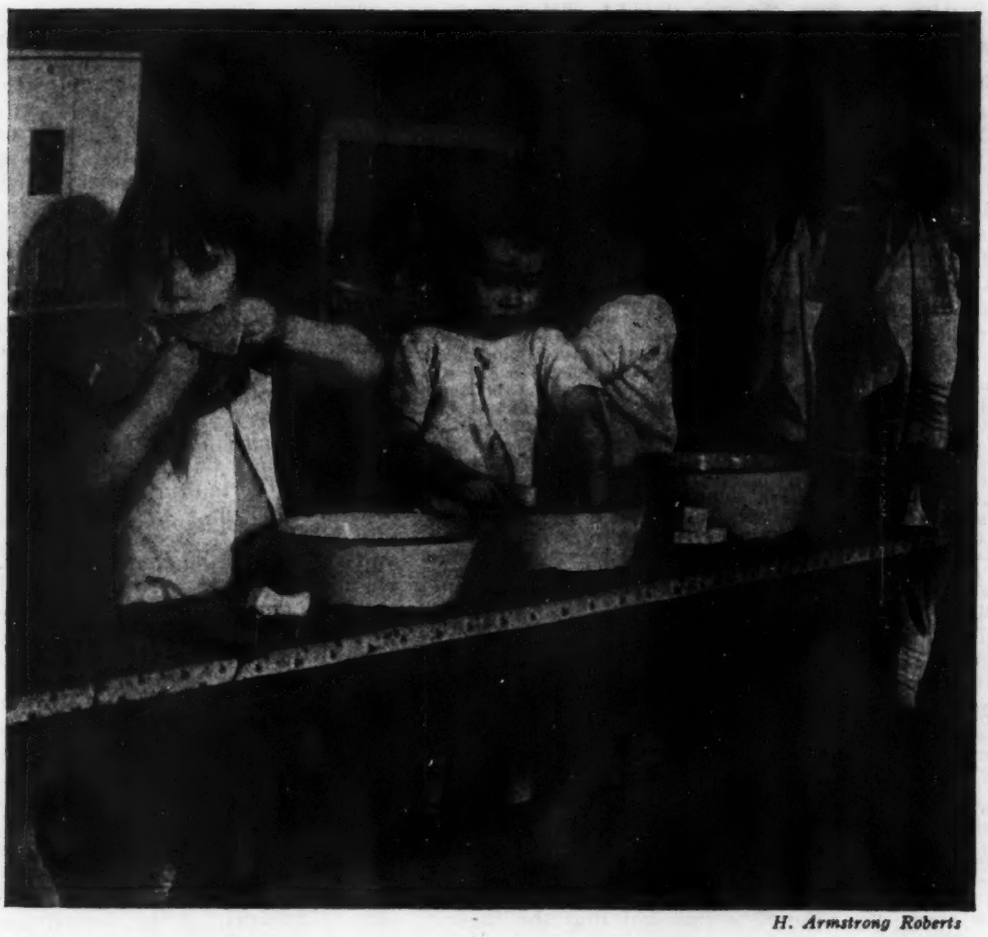
The supporters of whole wheat as against white flour for dietary purposes argue that the human bowel requires a certain amount of roughage in order to exercise its functions satisfactorily. This point must not be considered without reference to the varying conditions that may exist in different individuals. Dr. W. C. Alvarez of the Hooper Foundation for Medical Research has vigorously attacked the unguarded and unqualified recommendation of coarse food substances: "Some men and women can be greatly helped by bran," he says, "and their constipation can be cured if they happen to have the digestion of an ostrich; but if they happen to have congenitally defective or handicapped digestive tracts; if they have ulcers or narrow places, they cannot handle the mass of indigestible material, and they promptly get into trouble." Many other dietary substances such as celery, lettuce, spinach, and raisins provide roughage. Why ask bread to be like Messalina—all things to all men?

Another example of the effort on the part of the Council to protect the food industry against unjustifiable criticism is a recent report on cereals. The theory had been advanced, in high nutritional circles, that cereal products contain a toxic decalcifying substance. After reviewing the available evidence the Council concluded that the theory was not sustained and that the hypothetic toxamin did not exist. "Hence," they added, "there appears to be no necessity at the present time to fortify cereal products intended for general human consumption with vitamin D in order to overcome the effects of an alleged toxic factor." Another example is presented by the problem of lead in foods. This was given special attention, and from a review of the evidence obtainable, it was concluded that the products standing accepted by the Council contain either no lead or minute traces, which are of no known hygienic significance.

The Council has published in *The Journal* numerous reports on various phases of the many principles connected with the subject of nutrition. The first series, published jointly with the Council on Pharmacy and Chemistry, dealt with vitamins. The articles, which appeared between April 23 and Aug. 6, 1932, were written by such eminent and dependable authorities as the late Alfred Hess, the late Lafayette B. Mendel and E. V. McCollum. Hess will always be remembered for his fundamental research on scurvy and rickets; Mendel, professor of physiological chemistry at Yale, was in the top flight of contributors to the science of nutrition. McCollum, in the Wisconsin Agricultural Experiment Station, was first to isolate vitamin A. Later he became professor and head of the department of chemical hygiene of the School of Hygiene and Public Health of the Johns Hopkins University. A new series of authoritative reports on the vitamins is now being published.

Among the recent Council-authorized reports on a variety of other topics of nutritional interest are: "The Nutritional Significance of Bran," "The Nutritional Significance of Gelatin," "Vitamin D Milk," "Dextrose, Its Place in the Diet of Normal Adults," "Strained Fruits and Vegetables in the Feeding of Infants," "The Nutritional Significance of the Curd Tension of Milk" and "The Alleged Decalcifying Effect of Cereals." These reports and publications, prepared by authorities and approved by the Council, are intended for the guidance of the food industry as well as for the education of physicians. Reprints of them are made available, without charge, and may go to teachers and others who request them.

Not only have the various activities of the Council borne fruit as regards the standards of advertisers of accepted products; the influence also is apparent in the advertisements of products not submitted and even in many instances of those that have been rejected. This is true for Ovaltine and Fleischman's yeast, to which reference was made before; not that the advertising of either of these products would be acceptable now, without considerable revision, but that in both cases, improvement has occurred. The same can be said of the advertising of the Kellogg Products from Battle Creek and of numerous other well known brands of processed foods. Advertisers are appreciating that elevating their standards is as helpful to them as it is to the public. Following is an example of the letters in which leaders in the food industries have given expression to this opinion: *(Continued on page 667)*



H. Armstrong Roberts

IN THE NURSERY SCHOOL EACH CHILD HAS HIS OWN TOWEL, WASH CLOTH AND COMB, WHICH HE LEARNS TO RECOGNIZE BY A SYMBOL, AS DESCRIBED IN AN ARTICLE IN THIS DEPARTMENT, ENTITLED "THE NURSERY SCHOOL: WHAT IS IT?"

SCHOOL and HEALTH

Conducted by **J. MACE ANDRESS**, *Ph.D.*
67 Clyde Street *Newtonville, Mass.*

BUILDING THE HEALTH CURRICULUM IN THE HIGH SCHOOL: XI

THE FACULTY of the Queenstown High School assembling at its eleventh meeting prepared to discuss the important problem of the teacher's health. As usual Mr. Richards, the principal, presided.

MR. RICHARDS: You will all recall that at our last meeting the chairman of our new Health Council informed us that we were to come together today to consider the teacher's health. I take great pleasure in turning the meeting over to Miss Phillips.

MISS PHILLIPS: Everybody knows that in spite of the importance of school buildings, gymnasiums, laboratories and equipment the ultimate success of the school depends on the character of the individual classroom teacher.

The ideal teacher should have an abundance of energy so as to carry on his work effectively and be able to live a broad and wholesome life outside of school. He should be able to adjust himself to life so as to live courageously, successfully and happily. With these thoughts in mind your Health Council began to inquire into the health of the teachers of our school.

It has become pretty well established that a regular health examination by a physician is desirable for everybody. Such examinations often lead to the discovery of conditions and defects that might be serious, but when discovered they may be removed or lived with satisfactorily. Many of us, for example, know some one who has suffered with arthritis. Careful examination revealed focal infections that were responsible. When such foci were removed the arthritis came to an end. It is well known that persons who have heart trouble may live through a normal span of life after their defect has been discovered and they have learned to live with their handicap.

What has been said about people in general applies equally well to teachers. A careful checking up with our teachers shows however that few of them are in the habit of getting a health examination annually, and that many of them have not had a health inventory for years.

After talking with our school physician, Dr. Vanderhoof, I found that he was eager to offer his services and those of his staff to our teachers. At the time when the entering class to the high school is being examined he would be pleased to examine as many of the teachers as wish the service. Such examinations will not include the more special ones such as x-rays, metabolism tests or electrocardiograph tests. If these are recommended to the teacher they will need to be given by regular practitioners. Already more than 50 per cent of the teachers to whom

this proposition has been presented have notified me that they would like to have Dr. Vanderhoof's examination in the fall.

MISS CHASE: What an excellent suggestion, Miss Phillips. May I add my name to the list? I think it is also a good example for our pupils.

MR. RANDOLPH: Pardon me. Perhaps I am anticipating, but I wonder whether you were about to mention the need of a restroom?

MISS PHILLIPS: That is on my list, but I should like to have you mention it since you have given it so much of your time.

MR. RANDOLPH: Our needs can be stated briefly. As is well known, this building was erected a number of years ago before there was much interest in the health of teachers. Since then the increasing demands on our building have made restrooms practically impossible.

The situation now is hopeful. An addition is being planned for the high school. Mr. Richards informs me that he has recommended that two restrooms be incorporated in the new building.

MISS PHILLIPS: Mrs. Wilkinson, a member of our committee representing the parent-teacher association, will be pleased to say a word here.

MRS. WILKINSON: Although I have not consulted my committee I can give positive assurance that we shall be able to help the teachers furnish these restrooms.

MISS PHILLIPS: On behalf of the teachers I wish to thank you for your generous cooperation. These rooms will be most useful when teachers are fatigued and ill. They will contribute much to the efficiency of our teachers.

Not only does the teacher need a body which is physically sound and capable of performing its work; she needs also mental health and vigor. This means the development of a satisfactory philosophy of life, the ability to make adjustments to the constant changes and vicissitudes of life and the ability to attain and maintain satisfactory human achievements.

Our committee recommends the reading of some good books on mental hygiene. For those who are interested in historic backgrounds, W. H. Burnham's "Great Teachers and Mental Health" will prove interesting. Many other books are available, such as "The Psychology of Adjustment" by L. F. Shaffer, "Educating for Adjustment" by Harry N. Rivlin and "Personality Maladjustments and Mental Hygiene" by J. E. W. Wallin.

At the next meeting our topic for discussion will be "Measuring Our Progress in Health Education."

My Way of Planning

MARY COLE WALLS
Fayette County Schools
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This fascinating story of how a teacher in a one-room school developed a unit on Holland and took advantage of the situation to teach health in a natural way should invite other teachers to try a similar experiment.

SOMETIMES the best health teaching grows out of activities along other lines and is the result of taking advantage of things that come up from day to day.

Last year my school worked on a "deep sea" unit. This year the many faraway experiences still lingered in the minds of the children and made them want to know more about people living in small countries or islands bordering on the deep sea.

The greater number of the children chose Holland; the rest wanted a rock garden. After talking things over for a while they met the issue by promising one another to help on Holland. The next question to be decided was how to get to Holland. One said by boat, another by ship, but finally all decided that the quickest way would be by air. So we made an imaginary journey to the land of dikes and windmills.

Books and magazines were brought to school, and stories of Holland were read with interest. The children learned that the Dutch people were a hard working, energetic race. They learned that the people of Holland did not believe in killing other people or races for their lands but preferred to push back the sea by hard labor to reclaim what would otherwise be the ocean.

They learned too about Dutch colonies and how these colonies provided raw materials for the factories of the mother country.

How could we picture Holland and all the interesting things we were learning? A frieze! That was just the thing! So the wrapping paper was measured. Hammers and tacks were brought, and work was begun. But the children ran from one thing to another, got in one another's way, and therefore nothing was done. The children all realized what was the matter, and so all work stopped. Small groups were organized around special interesting things, and everything began to move along more smoothly. One group made Dutch shoes, flowers and Dutch boys and girls. Another made windmills, dogcarts and wagons. Still another made cows, cheese and houses and barns. The primer class made little Dutch story books with different pictures suggested by our talks about Holland, pasting the name under each one. In this way they learned to read and spell too. Each one was proud of his book and worked hard to make it interesting.

In the library corner, one of the big boys cut out tulips to decorate the orange-crate bookcases, so that everything would look more like Holland. So the question came up about a way to get some real flower bulbs. With a penny from each one the bulbs were bought, and they were then planted in the tops of old paste jars, set at the base of the frieze.

Fish was the next suggestion! Fish for a country right off the ocean! So four goldfish were gotten, and much was learned about their care and food.

While working, of course we often found ourselves with dirty hands. But we learned not to wash from the same basin of water because that is one way of catching some diseases. An idea was worked out to hang a can on a nail on the back porch. A small hole was made at the bottom, and warm water and soap running out of the can made a free-for-all wash without using the same water.

The path was thus clear to teach much about cleanliness, a quality for which Holland was most noted. We discussed ways and means for making our homes more clean, beautiful and attractive. We made our motto "Keep an eye for the beautiful" and drew up the following resolution:

"We resolve to keep all front and back yards clean of all rubbish. We resolve to keep all fences built up and chicken yards clean and pig pens far away from the house. Keep our barns clean and cow sheds as clean as in Holland. Keep flowers growing in our gardens and shrubs growing around the less attractive nooks."

We formed committees to take all the responsibility for keeping our classroom clean, sanitary and healthful, and every child in our school was on one active committee. We measured our light and found we needed better light and more fresh air as well. Three big boys and two girls changed all the shades and fixed boards in front of each window to prevent direct air from hitting any one's back. We hung feathers on threads from different parts of the ceiling to make sure we had air in motion, and we all learned to read the little thermometer fastened to an oatmeal box, which traveled from seat to seat.

We learned that Holland was famous as a dairy country and how milk was carried from the farms to cities and factories in large spotless glass-lined tank cars. We learned how it was bottled after

being pasteurized, and we will have a trip to a pasteurizing plant later on to see how this is done.

In all we have used reading, writing, history, science, geography, art and spelling, language and arithmetic to help us enjoy Holland more. Whenever the children recognized their problems, with a little guidance they found themselves in what they were doing. And so our study of Holland has made us appreciate other nations more and has helped us in our own living.

The Nursery School: What Is It? What Are Its Problems?

NATALIE HASKINS BLUMENTHAL

In the first article of this series, Mrs. Blumenthal sketched briefly the historical development of the American nursery school. She continues by describing a day in a nursery school. Since the little child of 2, 3 and 4 has not yet become master of his own physiologic processes, much of the school's program is planned around these needs.

THE good nursery school pays particular attention to health needs. Because the young child is particularly susceptible to infectious disease, arrangements must be made to protect him from as many sources of infection as possible. The good nursery school must have a health inspection every day before children are allowed to join others in the group. This inspection consists of examining mouth, throat, nose, eyes and skin for any early manifestations of contagious diseases. In case any symptoms are noted the child is not admitted to the group for the day. In many schools, doctors come in for the hour during which children arrive at school and make these inspections. Sometimes the doctor may be a father who gives his services in return for his child's tuition. If the school is near a medical school or a hospital a young intern or fourth year student is often engaged for this service. In other schools a trained nurse is hired, but every good nursery school has this daily inspection at the arrival of children in the morning.

Before enrolment in the nursery school, most schools require a physical examination by the family physician or in some cases, the school arranges for a physician to give these examinations at the school in the presence of the mother. The information gained on such an examination is the teacher's basis for planning a program to meet individual physical needs of the children.

After the daily inspection, children are given a drink of water, the younger ones are taken to the toilet, and then, in suitable weather, they go to the playground for outdoor activity. Because outdoor play activity is a paramount need of children of this age level, in a good nursery school as much time is spent outdoors as weather permits. Equipment is selected with a view to developing strong muscles of leg, arm and backs at this age level, leaving development of finer accessory muscles for a later age. Boxes, ladders, jungle gyms, slides, swings and planks give climbing activity which strengthens arm, leg and back muscles. Wagons, tricycles and trucks develop leg muscles. In addition large building blocks, swings, sand boxes, doll carriages and many other materials provide a wealth of play interests, all of which may be carried on satisfactorily outdoors.

In the middle of the morning, usually around 10 o'clock, a serving of tomato, orange or pineapple juice is given the children, and younger children are again taken to the toilet. Much attention is necessarily given to the establishment of good habits of children in the nursery school. It is realized that learning the habit of going to the bathroom at regular intervals in a matter of fact manner is essential for this age level. Children are encouraged to learn to unfasten and fasten their own clothes as soon as they can do so with ease; but the good nursery school teacher realizes that forcing independence at too early an age level often results in emotional strain and a resistance to the whole eliminative process, which is much worse than delayed independence in buttoning clothes. The habit of always rinsing one's hands after the toilet is a fundamental one which is established in this period.

Around 11 o'clock the children in most nursery schools start to put away play materials. Here again a cooperative venture between children and teachers is the most desirable way of helping children to learn that putting away toys is the natural consequence of a play period.

As the children are taken into the schoolroom, usually in small groups, they take off their wraps and then go into the bathroom for a thorough clean-up after their play period. In the bathroom everything is arranged to encourage independence. If toilet seats are too high for children to get on and off alone, steps or platforms are built around them so the child can be independent. A consistent order of doing things is taught the child in each routine. For example, he always goes to the toilet first, then flushes toilet, fastens clothing, then washes hands. This is followed each time he goes to the bathroom, and it soon becomes automatically habitual. Low wash basins are provided as well as a hook for towel, face cloth and comb, which are within the child's reach and are marked with a picture or symbol which he learns to recognize as his. The same symbol appears above his space in the cloakroom, on his bed and wherever his own belongings are kept. This establishes within his mind a foundation for differentiation between other persons' belongings and his own.

After hands are washed, he empties the water and draws fresh water for washing his face. After the face cloth is used, rinsed out and rehung the child gets his towel. Then he takes his comb and before a low mirror takes the responsibility for combing his own hair. Through all this procedure a trained adult is near, ready to give help at the moment when she sees it is needed, never interfering however as long as accomplishment is being made. When guidance is given it is in positive tones such as "Now you are ready for your face cloth, John" or "Let me help you squeeze it dry, so it won't get your towel wet." Words of encouragement and appreciation are given when deserved; but through this whole routine procedure the aim is kept in mind that each child is learning independence, and in the good nursery school no group standard of achievement is established which discourages the child who is a little slow in attainment. If he is day by day bettering his previous accomplishment, that for him as an individual is growth. Learning in young children must be evaluated in terms of individual growth.

After washing come a few moments of complete relaxation before dinner is served. It has been shown over and over again that

the ability to lie down and relax completely is important at any age level. After a morning of active play it is especially important for young children and also has a definite effect on appetite at the noon meal. Often the younger children who become fatigued more quickly have a short midmorning rest as well as the rest before dinner.

Sometimes this rest period is followed by a short music period. More often as winter weather necessarily shortens the outdoor play period, the music and story periods come between a shorter outdoor play period and the noon rest period. Music and story groups at the nursery school age level are necessarily informal, and often the group is divided into several smaller groups for these periods. Young children are such individualists that adherence to group standards of behavior in large group situations is difficult. However the actual story and music period may be planned, good nursery schools do include both in their program. On days when outdoor play is impossible because of weather conditions, a variety of materials including doll play materials, paints, crayon, clay, blocks, wheel toys, puzzles, books and many others, are available. As is true in all activities in the good nursery school, use of these materials is kept on an informal plane with the teacher in the background to suggest and give technic only after the child has found a need for help following his own experimental use of the materials.

The length of the nursery school day depends on the need within the particular school. Most of the institutional and many of the other well established schools are run on a full day schedule from 9 to 3 or thereabouts. The half day program usually ends about 11: 30 with children going home for dinner and naps. In an all day program, dinner is served around 11: 45. Small tables for four or five children with a teacher are usually set with a salad fork and teaspoon when the children come to the table. After the bib is tied on, each child is given his dinner at once without being expected to wait until all are served. Waiting for others to be served is a desirable learning at a higher level, but for the nursery school child it detracts from the importance of eating, which seems to be more important at this age level. Dinner is usually served in a bowl which has sloping sides so that the young child can get the food on his spoon easily. The regulation nursery school meal consists of a piece of hard toast for chewing, meat (liver, chicken, lamb or beef) or egg; potato, rice or macaroni; a cooked green vegetable; a sandwich made of whole wheat bread with an uncooked vegetable such as lettuce, carrot or cabbage inside; milk and a simple dessert such as custard, stewed fruit or gelatin with fruit.

The chief aim of the feeding program in the nursery school is a matter of fact attitude toward eating. To this end, children are first of all given utensils which make for ease in use. Besides this they are given small servings which encourage eating everything given them. At the beginning of the year the average serving is usually a tablespoonful; then as the fundamental attitude is established, servings are increased in size. At all times second servings are encouraged and found preferable to one large serving which discourages the accomplishment of a clean plate. For the child whose appetite is poor, milk and bread are usually withheld until after vegetables and meat have been finished. Dessert is not given until the rest of the dinner has been consumed. This does not set a premium on dessert as being more desirable than the rest, but every child sees the logic of the statement, "If you are too full to eat your dinner, you are too full for dessert." A matter of fact attitude toward food refusals is one thing that a trained nursery school teacher is much more apt to be able to maintain than a parent whose emotions are involved in the situation. For this reason, as well as the fact that children profit by the example of seeing other children eat, the nursery school has come to be recognized as a most valuable means of aiding children who are "feeding problems."

As each child finishes dinner he goes to the bathroom for toileting, washing and undressing for naps and then goes into bed for a nap of at least an hour. Children who do not sleep are required to rest at least, and all are in bed until after 2 o'clock. Following naps come dressing and toileting, then a cup of milk and crackers. If the weather permits, children are taken outside for play until called for. If not, indoor free play closes the day's activities.

[NOTE.—Having thus sketched the broad outlines of the program in the nursery school with special attention to the aspect of physical development, in the last article of this series the author will consider emotional, social and intellectual development of children as achieved through the guidance of the nursery school.]

Body Building and Regulating Foods

Vitamins B_1, G (Riboflavin) and C and the Pellagra-Preventive Factor

ETHEL AUSTIN MARTIN
Director, Nutrition Service
National Dairy Council

In this article, Mrs. Martin continues her discussion of the vitamins. There is a brief presentation of sound factual material that all teachers need to know. At the end, Mrs. Martin, as usual, suggests the approach that should be made in the different grades. What do your pupils know about these vitamins?

IN ADDITION to vitamins A and D, discussed in the two previous articles of this series, there are at least four other factors, vitamins B_1, G (riboflavin) and C and the pellagra-preventive factor known to be required for adequate nutrition and available in a properly chosen diet.

Vitamin B_1

Vitamin B_1 is necessary to the growth of all young animals and to reproduction and lactation, a form of growth, in mature life. Vitamin B_1 is also essential to the normal functioning of the nervous system and to maintenance of a good appetite. Sufficient vitamin B_1 is further essential for normal activity of the digestive tract and for its general strength and good tone. A moderate shortage of vitamin B_1 in the diet may cause a variety of seemingly minor ills which often go unrecognized. Poor appetite and more or less vague symptoms of indigestion are probably a common result of low vitamin B_1 intake. The disease, beriberi, a nerve condition characterized by numbness and paralysis of the legs, results from a prolonged deficiency of vitamin B_1. This disease has been common in the Orient for centuries, where the natives practically subsist on a diet of white rice, which loses its vitamin B_1 content when the outer coat of the grain is removed in the milling process. Beriberi is practically unknown in our own country, however, because of our varied diet.

Food Sources of Vitamin B_1

Vitamin B_1 is fairly evenly distributed in natural foods, and therefore there should be no danger of a shortage in our daily food supply. There does appear to be a real danger of B_1 deficiency, however, due to the custom of using, almost exclusively, highly refined mill products in bread, bakery goods and breakfast cereals in diets containing too small a proportion of milk, vegetables, fruits and eggs. Dr. H. C. Sherman of Columbia University has devised the following dietary rule for obtaining sufficient vitamin B_1: "If half the needed calories are taken as fruits, vegetables, milk and eggs, and if half of whatever breadstuffs and cereals are taken in the whole grain, or 'dark' or 'unskimmed' forms, there will almost certainly be provided an ample supply of vitamin B_1—and of many other important nutritional factors as well."

Let us estimate the vitamin B_1 content of a specified diet. Let us see, for example, whether a girl of about 10 years, needing approximately 2,500 calories, obtains the 300 to 500 Sherman-Chase units of vitamin B_1 she requires daily, if she takes the "protective" foods—milk, vegetables, fruits and eggs—in the quantities usually recommended. The vitamin B_1 values of these foods, together with those of vitamins G (riboflavin) and C, are listed in the table. It is evident at a glance that she satisfies minimal requirements for vitamin B_1 with these foods but that optimal amounts are not obtained. It is at this point that the need for whole grain products is demonstrated most forcefully. The addition of four servings of whole grain bread and breakfast cereal alone add nearly 175 units of vitamin B_1, an amount which would make possible a desirable total. With smaller amounts from potatoes, meat and perhaps additional fruits and vegetables an optimal amount of vitamin B_1 is obtained.

Vitamin G and the Pellagra-Preventive Factor

A discussion of vitamin G and the pellagra-preventive factor logically follows that of vitamin B_1, for these were once thought to be a single vitamin. Vitamins B_1 and G (sometimes called B_2) together with the pellagra-preventive factor and at least one other vitamin, B_6 or H, known to be nutritionally significant, make up the "vitamin B complex." Vitamin G, now known as riboflavin, is essential to growth and to normal nutrition of rats and other animals at all ages. An abundance of vitamin G (riboflavin) in the diet of animals produces optimal growth, helps maintain the characteristics of youth and improves the condition of both mother and young during pregnancy and lactation. When the diet is poor in vitamin G over a period of time, there are digestive disturbances (different from those caused by lack of vitamin B_1), general weakness, unhealthy condition of the skin and diminished vitality. It was once believed that continued shortage of vitamin G led to pellagra, a skin and nerve disorder occurring in the southern part of the United States as a result of prolonged poor diet, lacking the protective foods. It is now known that pellagra is not a vitamin G (riboflavin) deficiency disease but is caused by a deficiency of some other factor (or factors) of the vitamin B complex whose nature is not yet thoroughly understood.

Food Sources of Vitamin G (Riboflavin) and the Pellagra-Preventive Factor

The foods rich in vitamin G (riboflavin) are much the same as those rich in vitamin B_1, the chief difference being that whole grain cereals contain more vitamin B_1 than G, and milk, eggs and meat contain more vitamin G. Vegetables and fruits contain about the same amount of each. A glance at the vitamin G column in the table shows that the protective foods yield amounts more than adequate to supply the probable needs of a child. This table also shows the important contribution of a quart of milk to vitamin G needs. It bears out what Dr. H. C. Sherman has said in his most recent book: "When account is taken of the amounts [of vitamin G] ordinarily eaten in reasonably well-balanced dietaries and food supplies, milk is doubtless the most important source of vitamin G for the American and European peoples."

The pellagra-preventive value of foods cannot yet be expressed in terms of units, owing to the absence of suitable methods of assay. In general, foods which are rich in vitamin G are also good to excellent sources of the pellagra-preventive (P-P) factor. Some foods which, taken in sufficient quantities may be relied on to prevent pellagra, are milk (about one quart daily); green vegetables such as kale, collards and turnip greens; green peas; canned tomatoes and certain kinds of meat including fresh lean beef, lean pork, canned chicken and fish.

Vitamin C

Vitamin C, like the vitamins previously discussed, is essential to growth, reproduction and lactation. Also it has important functions in the maintenance of a high level of positive health at all ages, including good tooth health and the ability of the tooth to retain its calcium. The body can neither store nor manufacture vitamin C; therefore a fairly regular source is necessary in order to keep the body supplied adequately.

If there is almost total lack of vitamin C for a period of time, scurvy develops. In severe scurvy there are damages to blood vessel walls, tiny hemorrhages, bleeding gums, loose teeth and stiffness of joints. But scurvy is no longer common as it once was. A generation or more ago it was widespread, particularly among sailors on long sea voyages. Today it is seen occasionally in country districts after a long winter on a restricted diet. However a condition similar to scurvy, but usually not recognized as such, commonly develops on a poor vitamin C diet. It is characterized by

(Continued on page 660)

Vitamin B_1, G (Riboflavin) and C Content of "Protective" Foods

Foods	Amounts	Vitamin B_1 Sherman-Chase Units	Vitamin G (Riboflavin Sherman-Bourquin Units	Vitamin C Sherman Units
Milk	1 quart	198	888	30
2 Vegetables				
Peas	½ cupful	19	19	15
Lettuce	⅛ head	19	14	4
2 Fruits				
Orange juice	½ cupful	73	79	43
Prunes	4 medium	..	86	5
Eggs	1	24	52	..
Total		333	1,138	97
Estimated Desirable Daily Amounts for Children Requiring About 2,500 Calories a Day		300-500	400-600	60-80

PARASITE TRICKS (Continued from page 613)

this exceedingly favorable culture medium.

The second method of transmission is through regurgitation or vomiting. House flies cannot bite as they have no biting mouth parts; they can only suck up food, and to prepare the food they soften it by regurgitating saliva, which one may see any time if a fly is watched on a lump of sugar. This regurgitated drop usually contains many germs, whatever variety that may be in the fly, and so food may be highly contaminated.

The third method is usually coincident with the second, as when a fly feeds, it nearly always deposits its waste material from the intestine at the same time. In the "fly speck" great numbers of germs are always present, and they may live for many days in this locality. Hence potential danger resides with every fly. While typhoid is considered the principal disease that the fly may carrry, it has also been found to transmit cholera, dysentery, tuberculosis, infantile diarrheas, anthrax, trachoma and other eye diseases. Considering its great potential dangers, we are still strangely indifferent to the presence of the house fly.

Many other flies are also exceedingly important in their power of transmitting diseases to animals and man. While some of them usually infect only animals, most of them occasionally are found in connection with human disabilities. One of the more common of this variety is a well known "stable fly" which closely resembles the house fly and is often mistaken for it. It is often said that in damp, muggy weather the flies bite badly. House flies cannot bite, but this fly (Stomoxys calcitrans), often called the biting house fly, is armed with a very efficient spear. With this spear it can quickly penetrate the toughest hide and may attack both man and animals fiercely. Such flies actually destroy animals at times by the constant irritation, the loss of blood and the infections conveyed. They transmit anthrax and surra, a destructive disease of horses. In the early days in the Philippines, I saw hundreds of valuable horses and mules destroyed by the bites of this fly, but how the disease was conveyed was not then known. These flies were at one time thought to be concerned with the spread of poliomyelitis, or infantile paralysis, but this has not yet been proved.

On quiet summer afternoons one is occasionally startled by a peculiar hum, different from the usual noise of flies, which is irritating enough; this hum challenges one to immediate action as it is so business-like and penetrating. This is the blue bottle, or blow fly, Calliphora vomitoria, named from its brilliant metallic sheen and a fancied resemblance to the colored glass bottles of years ago. These are in general the scavenger flies, and while they destroy much unwanted organic material and in that way are useful, they occasionally damage animals and man by depositing eggs in wounds, and the developing worms often cause much destruction to the parts so infested. It was this type of fly that produced the larvae that were recently used to clear up infected bone wounds. This method gave some really brilliant results; but these were found to be due to a chemical substance that the worms formed rather than to any specific action of the worms

themselves. The chemical substance has been substituted for the fly larvae, and this is much more satisfactory to everybody concerned. While under carefully controlled conditions fly larvae usually gave good results, they were exceedingly repugnant, often painful, and occasionally the worms got out of control and did considerable damage. They did however show a better way of handling such cases.

The blowflies differ somewhat in one of the developmental stages in that the larvae usually bury themselves much deeper in the ground and can emerge from a considerable depth of loose soil. If a piece of meat is found to be fly blown, frequently it is buried, with the fancied security of destroying all the maggots. Such worms are not in the least disturbed by the burial but will pupate, mature and emerge from several feet underground. Experimentally a depth of 9 feet has been observed.

The blowfly often deposits its eggs on meat left standing between meals on kitchen tables or sinks. Eggs or small larvae, swallowed when such food is eaten cold, may develop in the intestinal tract. This causes considerable digestive disturbance at times but rarely any permanent damage.

A group of vicious biting flies commonly called "gad," "horse" or "deer" flies (tabanids) are well known, especially where domestic animals abound. These flies are the cause of much damage to animals, even to being fatal at times and annoying and distressing always. Many animals become exceedingly panicky when these flies attack them and will run wildly around a field or, if harnessed, will become unmanageable and bolt. Many unexplained runaways have been thus caused. Years ago when horses were in common use, one of mine, which I regarded as safe enough for a "lady's horse," was proceeding along a road toward a little city when all at once without warning it became completely unmanageable, ran directly off the road and over an embankment some 10 feet high, wrecking the rig and damaging the occupants to some extent, all on account of the appearance of one horse fly. As such flies also attack man they are of more than merely commercial importance.

The breeding of gadflies is at complete variance with what might be expected. The eggs are deposited on water plants usually or those plants along the bank that tend to dip their leaves into the water at least part of the time. Occasionally the mud along a stream bank will be used. Some of the flies of this group protect their eggs with a sort of varnish coating. Others do not have this protection, and these are often attacked by a small black wasp, which lays its eggs in the fly eggs and so destroys the fly larvae. This wasp is of great economic importance in keeping the tabanid flies in check, but there are always enough of them that survive to cause much damage. The tabanids are among the most numerous of insects.

The eggs hatch in a few days, and the larvae quickly reach the water. Here they devour aquatic larvae of various kinds and remain in the larval stage for about a year. The pupal stage is quite short, and the full grown fly emerges usually in less than two weeks.

Tabanid flies are definitely incriminated in several diseases. They carry anthrax to animals and

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Ewing Galloway

IN THE LAST EDITION OF THE AMERICAN RED CROSS FIRST AID TEXTBOOK, DIRECTIONS ARE GIVEN FOR FIRST AID IN CASES OF GAS POISONING, FOR WHICH AN INHALATOR IS USED.

NEW BOOKS on HEALTH

Educational Paths to Virtue: I

By Shailer Upton Lawton, M.D., and Frederick Rand Rogers, Ph.D. Cloth. Price, $1. Pp. 88. Newton, Mass.: The Pleiades Company, 1937.

AGREEING with Schopenhauer that "the greatest of follies is to neglect one's health for any other advantage of life," the authors voice a special plea for health education as one of the most direct paths to virtue. Health is, they declare, "the base of the eternal triangle of human qualities which keep life on the move. Health, happiness, hope: these three. And the first of these is health. . . . Without health there is no life. The man with no health at all is dead. Such a one certainly is not a good citizen—he is not even a poor one. He performs no service to his friends. He has no morality good or bad. He is totally devoid of virtue." Health is described as "capacity for activity, capacities to live and serve, which in turn yield happiness to individuals, mutual aid to families and friends and therefore progress to the race."

Promoting health education becomes therefore a matter of social, moral and economic importance. It may most effectively be done through the guidance of children's physical activities. This responsibility rests on the physical educators, among whom are considered all teachers and parents who consciously guide the physical activities of children in the hope of improving their health or social behavior or culture. For their sakes the authors have marshaled an imposing array of facts to support their contention that good health or abundant vitality is a prime human virtue and have listed the answers to the "Doubting Thomases and the Men of Missouri" who question the need of more intensive and extensive health teaching.

LEOLA J. HARRIS.

[NOTE.—Books reviewed or mentioned in this section, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

You Bet Your Life!

Free. Hartford, Conn.: The Travelers Insurance Company, 1937.

THE cover of this booklet shows a gambler pointing to a speedometer on which the speeds above 50 are shaded, indicating the greater menace of automobile travel at high speed. The title expresses the theme of the entire book which, with liberal and sometimes lurid illustrations in colors, is developed under such headings as "The Traffic Lottery," "Eventually You Lose," "Dicing with Death!" "$17,000,000 to $1," "The Sky Is the Limit" and numerous other illustrations and references to games of chance and gambling.

To any one who is susceptible to reason, this booklet is a convincing presentation of the dangers of excessive speed, lack of concentration, bad manners, alcohol, poor lighting and other offenses committed by the unsafe driver. The worst of it is that so many of the drivers who need this message are not the ones who will read it or pay attention to it.

W. W. BAUER, M.D.

American Red Cross First Aid Textbook

Revised. Cloth. Price, $1. Paper, 60 cents. Pp. 256. Philadelphia: P. Blakiston's Son & Co., 1937.

THIS standard work on first aid has not been changed radically, but it has been revised in keeping with the changes in the practice of treatment of injuries now generally adopted by the leading surgeons of the United States. The most important change is the acceptance of the principle of fixed traction in the emergency treatment of fractures of the arm and leg. Other minor changes have also been made for the sake of clearness. Additional illustrations will help student and teacher to develop a better technic in methods of treatment and transportation. In the future as in the past this book will doubtless continue in use as a textbook for classes in first aid. Copies should be found in every library and every school. No home should be without it.

J. MACE ANDRESS.

The Cost of Adequate Medical Care

By Samuel Bradbury, M.D. Cloth. Price, $1. Pp. 86, with 13 tables and 9 appendixes. Chicago: University of Chicago Press, 1937.

THIS study undertakes to determine the costs of adequate medical care in terms of present-day private practice of medicine. The basic data for the annual expectancy of disease and for the number of services (visits, consultations, operations and accessory services of hospitals, nurses, x-ray, physical therapy and laboratory) are taken from the study, "The Fundamentals of Good Medical Care," made in 1932 by Roger I. Lee, M.D., and Louis W. Jones, Ph.D., for the Committee on the Costs of Medical Care. The author uses the minimum fees of the Chicago Medical Society, supplemented by a few minimum fees for services not included in the published schedule, to calculate the cost of the services required for each disease category.

Following this method the author deduces that adequate medical care, including prevention, diagnosis and treatment, for the average family would cost $310 annually. This estimated cost does not include public health services, dentistry, medicines or medical and surgical supplies. The author concludes that the adequate medical care of the kind and amount indicated in the study would cost $9,500,000,000, or nearly four times the amount of money that is now spent for these services.

This is an interesting excursion into the higher regions of the costs of medical care. Unfortunately, the author has had to take an uncertain quantity x, representing the annual prevalence of diseases and conditions requiring medical care, multiplied by an indefinite measure y, representing the amount and kind of medical services needed, and then multiply this unstable product xy by an arbitrary z, representing a single minimum scale of fees, to arrive at his cost figures xyz.

It is of interest to note that the fees used in computing the costs are approximately double the median minimum fees for 384 fee schedules of county medical societies in forty-four states. Accordingly, the conclusion that adequate medical care will cost four times the amount that is now spent might more reasonably have been two times.

The author of this study and the authors of the underlying "Fundamentals of Good Medical Care" frankly admit that the kind and amount of services required are founded on arbitrary judgment. The unfortunate feature of studies of this type is that certain persons will place entirely too much reliance on the accuracy and implications of the observations and will entirely disregard all the qualifications and limitations of the basic statistics.

The services and costs that are required to achieve the standard visualized are too often incorrectly interpreted as a damning criticism of the services and costs of medical care in private practice and a demand for a renovation in the present method of medical practice. The author of this volume does attempt to emphasize the importance of the general practitioner as the "hub of all medical practice"; the necessity of maintaining the "individualization of medical problems" on a physician-patient relationship, and the impossibility of the practice of medicine rising above the cultural level or the income limitations of our imperfect human society. R. G. Leland, M.D.

Alcohol and the Habit-Forming Drugs

By Grant L. Donnelly, M.D. Price, 80 cents. Pp. 218. Illustrated. Raleigh, N. C.: Alfred Williams & Co., 1936.

WHILE there seems to be no indication that the United States will readopt prohibition as a national policy, the evils due to intemperance are again demanding in nearly every state a vitalized school program on alcohol. In response to this need Dr. Donnelly has written this textbook for children on the alcohol problem. It is adapted to the lower grades and has already been adopted for exclusive basal use in the sixth grade of all the public schools of North Carolina. Although the discussion of the effects of alcohol on the human body is in the field of controversy, Dr. Donnelly's treatment of the problem is reasonably conservative and also scientific in spirit. The book is readable and is to be recommended to teachers who wish to put into the hands of their pupils a sane presentation of alcohol as a habit forming drug.

J. Mace Andress.

The Family's Food

By Faith R. Lanman, Hughina McKay and Frances Zuill. Edited by Benjamin R. Andrews, Ph.D. Cloth. Price, $1.68. Pp. 630. Illustrated. Chicago: J. B. Lippincott Company, 1937.

THIS book, now in its second edition, is intended as a high school textbook on foods and cooking. It is an interesting and accurate account of such subjects as the planning of meals, the buying, preparation and serving of foods and related topics. Over 125 pages of recipes and directions for home canning and kitchen management are included. An interesting chapter provides suggestions regarding school lunches and plans for party meals, buffet suppers and picnics. There is a chapter on social customs at the table and a discussion, with illustrations, of proper manners in eating. The book is well planned, excellently printed and copiously illustrated.

It is difficult to conceive of a girl of high school age not liking a course based on the material covered by this textbook. Such a student will learn not only how to plan and prepare meals but also how to buy foods intelligently. Parents also might read the book with profit. There is, for example, a page of illustrations, obtained through the courtesy of the National Live Stock and Meat Board, which provides information on the highly important art of carving roasts of meat.

The proper planning of work in the kitchen is an accomplishment which, like good cooking, can hardly be taught. Helpful suggestions however are worth while, and many covering this subject are included in this book. There is a section on a "time-work schedule," which is written in intimate diary form and in which a young lady describes how she took over the preparation of the evening meal while her mother was away. At 6 p. m. the daughter left the kitchen to announce dinner, leaving all the pots and pans filled with water on the range, in order, as the authors write, to "keep the sink clear." At 7:30 p. m., according to the schedule, the dinner was over. Is not any young girl doomed to disappointment if she is brought up to think, after she has spent most of the day preparing a family dinner, that she can keep the men at the table for one hour and a half? Will she not be lucky if the men stay seated for thirty minutes? The diary also seems to be unfinished because it closes without mentioning the dirty pans and dishes. While thus indulging in quibbles, it might be mentioned also that the "doughnuts" described in the text would be "crullers" in New England and "fried cakes" in other localities; and it would seem to be desirable now and then for the authors to pay more attention to geographic customs and preferences. F. C. Bing.

Keystone-Underwood

WHAT CAUSES A CHILD TO PERSPIRE EXCESSIVELY AT NIGHT? THE ANSWER IS GIVEN BELOW.

QUESTIONS and ANSWERS

Perspiration at Night

To the Editor:—I have a boy 5½ years old who perspires for at least one hour after falling asleep at night. When he is excessively active during the day, he perspires, even in winter. The result is that he has had an excessive number of colds. He is dressed neither too warmly nor too lightly, and the perspiration occurs whether or not he is active during the day.

R. S., Pennsylvania.

Answer.—It is difficult to give a definite answer to this inquiry without more detailed data concerning the daily habits and characteristics of the child. The common explanation for perspiring at night is too many bedclothes. What is needed for one person may be entirely too much for another.

A complete physical examination of this boy might disclose some physical defect, such as infected adenoids or an enlarged thyroid gland. Overactivity of the thyroid gland is relatively rare at this age, but there are cases on record for children as young as 3½ years. A basal metabolism could not be satisfactorily determined at this age except where a cot chamber is used; determination by the portable apparatus may not be satisfactory in this instance.

The sweating which is supposed to be characteristic of tuberculosis in the adult is not suggestive in a young child, but it should be ruled out by examination and clinical tests.

Posture Recording Mechanisms

To the Editor:—Will you please send me information as to description and cost of acceptable posture recording mechanisms for use in public school systems?

J. V., Wisconsin.

Answer.—The simplest method of recording posture is to use a cord with weight attached to one end. The cord is held just in front of the ear of the child, and the weighted end dropped to the floor, while the child is standing in his usual posture. The weighted end should fall at about the middle of the foot. If the weight hangs as far forward as the toes, or beyond, there is evidence of a forward droop of the head and shoulders. The cord should bisect the body laterally. Grades are marked good, fair or poor, according to the forward displacement of the body.

The Brownell method of recording anteroposterior posture (Bureau of Publications, Teachers College, Columbia University, N. Y.) consists of a series of thirteen silhouettes which show varying degrees of variation from the normal. The student's posture is compared with these silhouettes and graded according to a scale.

Schools may record the silhouettes of children rather simply. A view camera 5 by 7 or 4 by 5 is required, with film sheaths in the plateholders. Fifty dollars or less should cover the cost of the camera, which might be purchased second-hand. Instead of plates or cut film, which are expensive, fast bromide paper should be placed in the film sheaths of the plateholders. A dark background should be used, in front of which the child is placed. Care should be taken that the camera is correctly focused and set always in the same position for successive exposures. A small low stool may be used on which the student stands while being photographed. The subject should be well lighted, preferably by means of photo-flood lamps. The exposure varies according to the intensity of the light and the speed of the paper. The paper is developed in the usual way and produces a negative, a dark figure against a light background. The resulting silhouette may be compared with the Brownell chart and graded accordingly; this will serve as a permanent record. After a series of corrective exercises, further silhouettes may be made to show improvement of posture. The pupil should stand with his side to the camera and in the natural position which he assumes during habitual posture. The bromide paper which is used for the negative is much cheaper than films or plates and costs only a few cents a sheet. If a proper room is selected, the camera, background and stool may be permanently placed for successive exposures.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Blood Donors

To the Editor:—I know there are at least four types of blood, numbered I, II, III and IV, and I believe there is a type known as O. I know that numbers I and II are easy to find, that number III is considerably more scarce and that number IV is extremely rare. In case of an emergency when a donor with number IV blood is not readily obtainable, would it be all right to use two of II, or a I and a III?

J. T. L., Colorado.

Answer.—The classification of human blood into four types, or groups, is based on the fact that the serum of certain individuals possesses the property of agglutinating (causing to adhere in clumps) the red blood cells of certain other individuals and also of causing lysis (destruction by solution) of the red cells.

The classifications originally in use were described almost simultaneously by Moss in the United States and by Jansky in Europe.

It is obvious that these two classifications are identical for Types II and III but that Types I and IV are transposed, Moss' Type IV being Jansky's Type I and vice versa. It thus becomes evident that in reporting a blood typing *the classification used must always be noted* to avoid confusion in these two types.

In order to avoid this possible confusion and thus to avoid the inadvertent use of an incompatible donor, a third classification has been advocated. This is known as the "international classification," the terminology of which is based on the symbols arbitrarily chosen to indicate the presence or absence of the properties (agglutinogens) responsible for the clumping of the red cells of incompatible blood.

The relation of the international classification, advocated by the Health Committee of the League of Nations, to the Moss and Jansky classifications is shown in the table below.

Approximately 10 per cent of all adult bloods are Type O (Moss I or Jansky IV); 40 per cent are Type A (II); 7 per cent are Type B (III), and 43 per cent fall within Type AB (Moss IV, Jansky I).

Comparison of the properties of the different types at once demonstrates that a combination of Types I and II or two Type II bloods could not be used in place of a Type IV blood.

The donor should, first of all, be of the same type as the recipient, and the compatibility of their blood should be determined by a direct compatibility test before the transfusion. It is essential also that the donor be free from any communicable disease, especially syphilis.

Because the cells of a Type O (Moss IV, Jansky I) individual are not agglutinated by any serum, such individuals were at one time suggested as "universal donors" whose blood could be given to any one.

However, this practice has now been largely abandoned, except in dire and extreme emergency, because such donors may be the cause of dangerous reactions. The agglutinating properties of their serum may be sufficiently marked to produce undesirable reactions with the cells of the recipient. For this reason the donor should always be of the same type as the recipient, and the compatibility of the two bloods should be directly tested before transfusion.

JANSKY CLASSIFICATION

	Effects of Serum	Capacity of Cells
Type I	Agglutinates cells of II, III and IV	Not agglutinated by any serum
Type II	Agglutinates cells of III and IV	Agglutinated by serum of I and II
Type III	Agglutinates cells of II and IV	Agglutinated by serum of I and II
Type IV	Does not agglutinate cells of any group	Agglutinated by serum of I, II and III

MOSS CLASSIFICATION

	Effects of Serum	Capacity of Cells
Type I	Does not agglutinate any cells	Agglutinated by serum of II, III and IV
Type II	Agglutinates cells of I and III	Agglutinated by serum of III and IV
Type III	Agglutinates cells of I and II	Agglutinated by serum of II and IV
Type IV	Agglutinates cells of I, II and III	Not agglutinated by any serum

COMPARISON OF INTERNATIONAL, JANSKY AND MOSS CLASSIFICATIONS

International	Jansky	Moss	Effects of Serum	Capacity of Cells
O	I	IV	Agglutinates cells of A, B, AB	Not agglutinated by any serum
A	II	II	Agglutinates cells of B and AB	Agglutinated by serum of O and B
B	III	III	Agglutinates cells of A and AB	Agglutinated by serum of O and A
AB	IV	I	AB does not agglutinate any cells	Agglutinated by serum of O, A and B

Excelsior Dust

To the Editor:—Can you give me any information about the effect on the health of workers of constantly breathing air laden with the dust given off when excelsior is used in packing?

D. H. G., Pennsylvania.

Answer.—There is no definite reference to excelsior in the medical literature, as either a bronchial or a skin irritant, but from the 143 or more wood irritants affecting the skin listed by Senear (*The Journal* of the American Medical Association, Nov. 11, 1933), there is no reason why excelsior may not be a bronchial irritant to a small and perhaps insignificant group of susceptible persons. It can be well appreciated, however, that the type of wood from which excelsior is made is of greatest importance. It is usually made of southern pine, basswood, cottonwood or poplar, most of which have not been found to be irritating. There is no severe irritation, such as is found in certain leaf, bark and sap irritations causing the many forms of skin eruptions, nor can anything be found comparable to the effect of African "boxwood" dust. Other wood dusts reported by Coca are mahogany, birch, cedar, tamarack and pine.

So far as is known at present, it does not seem necessary for an industrial plant to go to any great expense to remove excelsior dust. Of course, there should be adequate ventilation from large quantities of the dust, and susceptible persons should be removed; but there does not seem to be any serious health hazard at the worst.

Heredity with Respect to Twins

To the Editor:—Because the male of any particular cross or breeding is a twin or has twins in his ancestry, is the result of that cross more apt to be twins than if the male's family shows no tendency toward twinning? My impression has been that twinning was dependent on the female's inheritance in this respect, as the behavior of the egg inside the female determined whether or not she gave birth to twins, and the sperm which fertilized the egg could not affect the behavior of the egg. This is not a question of whether the offspring may inherit a tendency to twin from the father.

E. A. L., Tennessee.

Answer.—It is necessary first to consider why there are twins. In considering this question, one of the first facts that arises is that twins tend to repeat themselves in the same family; that is, the mother of a pair of twins tends to have twins again. This shows, then, that twins are not altogether accidental but that there is a cause which produces them and persists in a given pair of parents of twins.

Second, a large number of pedigrees of twin offspring show that while in many cases the mother is herself a twin or has twins among her close relatives, in other cases, which are only slightly less numerous, the father is one of twins or has twins among his relatives. If twins appear in the close relatives of both the father and the mother, the probability of twin offspring is enhanced, but there is a large proportion of cases in which only the father has twins among his relatives, just as there are other cases in which only the mother has twins among her close kin.

In order to get further into this problem, one must recognize that twins are of two types; namely, the so-called "identical twins," which are believed to be derived from a single egg, and the "fraternal twins," which have developed from two different eggs which happened to develop in the maternal uterus at the same time. The latter are no more closely related to each other than children of the same parents born a year or more apart.

The latter type of twinning is often thought to be due solely to the fact that the mother has a tendency to ovulate, or ripen, two eggs at the same time, whereas in mothers that never produce twins there is no such tendency. Were this the whole story one would expect such fraternal twins to indicate merely a maternal tendency to double ovulation. This may well be an inherited tendency. One would not expect the father to play any rôle in such twin production. This is not the whole story, however. Studies that have been made on the ovaries of reproducing women indicate that instead of being a relatively rare thing, occurring in about 1 per cent of cases, double ovulation is frequent and occurs in at least one twenty-fifth of all cases of ovulation, or perhaps more frequently. Why then do two-egg twins occur so infrequently when double ovulation is relatively so frequent? The answer to this question is found in studies that have been made on lower mammals, such as pigs and mice. Such studies have shown that in many cases a half, or more, of the young that started development in the uterus died before they were born. In many cases the litter that is born of such mammals is only one fourth as numerous as the embryos that started development in the uterus. This result is due to the fact that embryos die, especially at very early stages of development, become entirely resorbed and leave no trace of their former existence in the litter that is born.

In women, also, it frequently happens that one of a pair of twins dies at an early stage and becomes more or less resorbed. If not resorbed it is born as a formless mass which demonstrates the former existence of a twin. Instead of only about 1 per cent of the population being one of a pair of twins it is probable that 4 or 5 per cent of the population are one of twins, the other member of the pair having never been born.

Why does one of the twins so frequently die in the uterus? It is probable that early deaths are vastly commoner than is usually believed. The death may occur so early that the miscarriage is entirely overlooked. Children that are born are the residuals of much larger progeny, most of which die in embryo. What is the cause of these embryonic deaths? They are believed to be due to defects in the genes which control development—defects so gross that development cannot proceed far. Children that are born are the fraction who carry a more or less satisfactory gene combination in the fertilized ovum. The defective genes may come from either the egg or the sperm, as these two cells play an equally important rôle in development. If there is a gross genic defect in the sperm, it may result in the early death of the embryo, and such a genic defect is an inherited thing. Though it may not affect all the sperm cells it will be distributed through the ancestry of the father. If the father's line has one or more of these defects, there will be an enhanced probability of intrauterine deaths. If the paternal germ cells are relatively free from these defects, then there will be a diminished probability of intrauterine deaths. In such a fraternal strain, relatively free from so-called fatal or lethal factors, twins will be relatively common. Thus it may be that the father's side of the house contributes toward twinning as truly as the mother's side does.

In regard to one-egg twin production it appears that this is due to some change in the developing embryo, which causes it to develop abnormally; rarely does it evolve into a pair of joined or Siamese twins, more frequently into twins that are entirely free from each other except that they have a common placenta. Why does an egg sometimes undergo division into two individuals? That is not known, but there is a tendency for the production of such one-egg twins to be hereditary, and statistics indicate that the sperm cell plays as large a rôle here also as the egg cell.

Inulin and Artichoke

To the Editor:—From time to time I have encountered the statement that inulin starch found in the tubers of the Jerusalem artichoke and other plants is nonfattening. Since this statement, if true, has an important bearing in diets intended to correct obesity, I wish to inquire whether there is any evidence to substantiate it.

J. A. D., New York.

Answer.—Inulin is a polysaccharide (a form of sugar) found in the tubers of many plants of the Compositae family, such as the Jerusalem artichoke, burdock and chicory. On treatment with acids, it is changed to levulose (a sugar), whereas, starch is broken down to dextrose. It happens, however, that there is no enzyme in the alimentary tract of man which is capable of hydrolyzing (or changing chemically) inulin. This carbohydrate therefore passes down the alimentary tract unchanged, except for a mild degree of hydrolysis which takes place in the stomach by action of the gastric juice, and it is acted on by the intestinal bacteria. These organisms break down the inulin and yield fatty acids and gases. The eating of inulin, therefore, causes considerable flatulence and discomfort but yields practically no food value.

It is possible, of course, to cook Jerusalem artichokes so that some of the inulin is broken down prior to ingestion, and this material, chiefly levulose, would have a defi-

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LYING (Continued from page 634)

women was mutual, though the younger of the two was less outspoken. She had no "society" finesse, and rather than appear crude she absorbed her insults in silence until the saturation point was reached. "Then I spoke my mind," and apparently in no subtle language. Mr. Chase, under maternal persuasion with sobs and reference to her high blood pressure, became convinced that his marriage was a mistake and began to act accordingly. He began to come home late and not always sober. He became abusive. Religious affiliations precluded divorce, or it would have been welcomed by all concerned.

At the age of 12 years, John states that he does not recall a single day of happiness at home. He never knows what the evening may bring. Father and Mother always quarrel. They curse each other and hurl dishes; one accuses the other of lying, cheating and stealing. Neither he nor his 17 year old sister have ever felt the blessings of domestic safety or parental love. The boy has an unusually keen insight into his status. He admits his occasional transgressions in honesty. He has a fine character, however, as shown by a recent event. John was accused of taking $5 from his mother's purse. He promised to replace the money in a few hours. In the evening he returned with $4, and rather than expose the culprit he accepted a severe beating. To the doctor he explained, "It's enough that my mother has to worry about Dad and me. I don't want her to worry about my sister too." The new silk stockings in which his sister appeared the following morning were merely a present from a girl friend. Subsequently she admitted many similar acts for which the boy was unjustly punished.

Unlike the four groups so far discussed where parental disposition remains a prominent factor, the group that follows is little affected by extraneous influences. Rather is it a result of an unexplained quirk in the function of the brain.

Henry Smith offers a good illustration of this type of pathologic lying. He is now 15 years old. Until three years ago, every one who knew him states that he was a boy of exemplary behavior. His parents were somewhat surprised when soon after his twelfth birthday the school authorities notified them that Henry had not been in school for three days. The boy merely laughed, and Mother agreed to the probability of a mistake in names. Not long after this incident, Mrs. Smith was requested to visit the school.

It turned out that the boy had been very irregular in attendance for the preceding two months, and the principal of the school began to suspect the excuse slips allegedly signed by his mother. Had Mrs. Smith noticed any change in her boy? the principal asked, adding, "Somehow Henry has changed rather suddenly. There have been a good many complaints about him lately; but knowing the boy I have not taken them too seriously. Yesterday, however, he was seen coming out of the teachers' cloakroom, and when one of the teachers found that her purse had been emptied, suspicion naturally fell on Henry."

It was soon established not only that the boy had emptied teachers' purses but that he was in possession of a good many missing articles, some of which he had "found" weeks before: fountain pens, pencils, notebook covers, brief-cases and other items obtained from fellow pupils and teachers. When first approached the boy denied ever having taken these articles. One of his friends, he asserted, left them in the basement. This statement had some truth in it. It turned out that for a short period the two boys were "working" together accumulating objects, but when the question of equitable division came up Henry proved "too crooked." The method of dividing the stuff was a novel one. It consisted of placing the fountain pens and pencils in an empty water bucket. Blindfolded each would take his turn at the drawing. At the second of these sessions the partner "accidently peeked" when Henry was making his dip. Not only were Henry's eyes wide open, but in his hand he had three of the choicest pens. The partnership terminated in a quarrel, and his accomplice left the premises, carrying home the name but not the game.

Man is born with certain basic characteristics which, if utilized to advantage, make his behavior acceptable. If they are used to disadvantage he becomes a problem to himself and therefore to those about him. In addition to imitativeness, imaginativeness and the love for power, there is the desire to accumulate or to hoard. Each one of these traits or urges, singly and collectively, underlies our daily activities and in some way shapes our futures as individuals and as members of society. The child's experiences are essentially limited. He satisfies his hoarding urge by gathering rusty nails, discarded bottle caps, shapely pebbles, anything that he is able to store away in his pockets. These objects are traded for treasures of lesser or higher values: buttons, bits of stained glass, a dead grasshopper or a live beetle. At this stage, utility of objects or the lack thereof has nothing to do with the desire for possession. There is merely the effort to accumulate.

Thus it is that the child in his desire to possess things, often unconscious of ownership values, falls into difficulties by appropriating objects belonging to others. Successful in his first few ventures the act is repeated, and it takes but a short time before the habit is established. Lying naturally goes with it and is used in an attempt to avoid punishment. In most instances of lying and stealing the youngster is found obsessed with a feeling of insecurity. At times he becomes involved with older boys who utilize his fears and guilt to their own advantage. The necessity for properly understanding the motivation of the child's behavior under such circumstances becomes obvious.

While discipline constitutes one of the most important phases of proper training, many parents assume that continuous nagging and severe punishment are necessary adjuncts to its achievement. Unfortunately such procedure often has exactly the opposite effect. If the child does transgress (and what youngster is he who never takes a cookie against maternal advice, goes skating against his elder's warning, or walks on the narrow cement retaining wall against exhortation to the contrary?) he goes around with a sense of guilt rather than risk punishment by his confession. It is true that some children have to be restrained at times and that under such circumstances, punishment has its justifiable place. However, a child seldom resents punishment when it is deserved,

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SUN GOGGLES (Continued from page 593)

clearly into wide spaces and over great distances. This the Crookes' lenses failed to do, for even in the lighter shades, the absorptive band cut off some of the yellow rays of light. It was a serious defect, since the highest sensitivity of the eye, in terms of formed vision, is in the yellow-green area of the spectrum. Yellow and green light rays contribute most to sight.

More research, more effort, more failure—and then in another decade, the problem of spectral transmission was controlled as systematically as that of selective absorption. In certain glasses which are either recommended by the government or receive its sanction, aviators, seamen—all who require identical transmission and absorption of radiant energy—may be provided with lenses that are opaque to ultraviolet and infra-red, yet have the maximum "seeing ability" in the yellow and green portions of the spectrum. They are yellow-green in color and do not interfere appreciably with color perception.

Recently, one of the largest and most dependable ophthalmic glass plants issued a statement to the effect that in several of their lighter shades of glasses the processes of both transmission and absorption are controlled with the same degree of accuracy as the grinding of curves, which means that workers in most professions and occupations may obtain glasses requisite to their individual needs.

In the lightest shade of "guaranteed" colored lenses, absorption is confined, broadly speaking, to the elimination of direct and reflected glare and to a softening of the light by means of neutral absorption throughout the entire visible spectrum. This provides comfortable sight for eyes oversensitive to light, and, according to the producers' guarantee, eliminates the reduction of visibility and the danger of developing the habit-forming tendency. Glasses worn constantly, in which too much visible light has been absorbed, prevent the muscles of the eye from remaining healthily active, and the eye becomes dependent on absorptive glasses. Today, color values are imperceptibly changed, and the pigmentation is so slight that, unless the glasses are seen alongside of white lenses, one scarcely notices that they're tinted —a boon to persons who feel the need of wearing them.

The interest in absorption lenses doesn't end in their service to industry and to sensitive eyes. Sportsmen, both professionals and amateurs, are discriminating in the colored glasses they select. The baseball player is concerned with having the glare from the sun removed when he reaches for the ball. The tennis fan, if he plays on a clay or concrete court, looks for elimination of both direct and reflected glare. At the moment keen enthusiasm is being expressed for polaroid goggles.

Polaroid is a new optical material invented by Edwin H. Land, a young Boston experimenter. It consists of a transparent film of cellulose composition, containing billions of crystals of an organic iodine compound, so tiny that they are invisible under a microscope magnifying more than 1,000 times. When this film, with the crystals arranged parallel to each other, is cemented between two layers of glass, it becomes a polaroid sheet, which filters out all helter-skelter waves of light, leaving only those which vibrate in a single flat plane.

"Magic," says the fisherman who, with glare removed from the surface of the water, can look underneath to where the fish he's after is swimming. "Great," echoes the motorist, whose driving is made easier by having the "every way" vibrations from oncoming headlights reduced to single "one way" streams of light. He'll be happier still, when the headlights themselves are made out of polaroid—they're said to be on the way. One hears whispers too that eventually opticians expect to grind prescriptions out of polaroid blanks; but, it is said, the glasses will be very expensive at first. Surely they won't cost more than $250, which is what the Duke of Saxony paid in the sixteenth century for a pair of lenses that were ground for him in Venice.

Polaroid goggles with polaroid side shields and elastic head bands frolic on the beaches too, where they represent smart simplicity as worn by the "ultra-ultra." They won't have as easy a time retaining their status of style setters this summer, however, as they had during the winter on southern beaches, in winter sports and on fashionable cruises; for "blinkers" have come prominently into the picture.

Perhaps the best way to describe blinkers is to quote the description of them by a woman customer in an optical department the other day: "They're made out of some sort of composition, and they're a sort of horizontal oblong, and they have side pieces so the sun can't get in from behind, and they're called like something you do when the sun's too bright." Without hesitation the clerk brought out three pairs of blinkers, black, dark blue and flashy blue-green. Stylists predict that polaroid and blinkers will wage a merry battle for style supremacy.

But there are more composition sun goggles that have become popular. One is a beautiful wine red,

"HE SAYS HE HAS SPOTS BEFORE HIS EYES"

used principally for skiing. It looks like isinglass but isn't, and nobody seems to know exactly what it is, except that it's made out of "some sort" of composition. "Some sort of" is just about as close as one can get to the undoubtedly fascinating "inside story" of these colored glasses, that for a third time in their history have burst on the market in riotous profusion.

Frames surrounding real lenses will be gayer than ever before, and the lenses will have plenty of color too. Either or both will match polka dots in bathing suits and blend with stripes in beach coats. "Vita" red will accent finger nails and flaming lips; brilliant blues and greens reflect the water's mood. Men and women, girls and boys will wear pastel frames that have fleecy cloudlike effects shimmering through them, with brown and amber glasses contributing deeper tones to the light stretches of sand. And everybody will want to use a brown cream which doesn't show from under the glasses and obviates that unsightly white circle when they're taken off.

For oculists this healthful scene which suggests the sportiveness of a masquerade will have a disturbing note because of the many inferior lenses that are inserted into attractive frames. They are blown glass instead of glass that is optically ground and polished, and they contain bubbles, striae, scratches and other impurities. Even worse, they are apt to contain an optical prescription as well, so that a person who has normal sight may be wearing a glass suitable for a nearsighted or a farsighted individual. One with eyes that are nearsighted may be looking through lenses that should be prescribed for one who is farsighted, and vice versa. And wearing these glasses over one's own prescription may either strengthen or weaken that prescription or subject the eyes to opposing corrections.

The difference in price between 10 cents, or the cost of the cheapest sun glass, and 75 cents, which is the least expensive optically ground and polished sun glass obtainable, is undoubtedly a matter of enforced consideration to some. When it isn't, surely the monetary angle should have no weight, in consideration of the fact that one glass may harm the eyes, whereas the other pair of lenses insures optical safety.

Up to a few years ago, most of the cheap sun glasses sold in the United States were imported from Japan, which country has a large celluloid industry and controlled the world output of natural camphor, the plasticizer used in celluloid.

However, because of the ingenuity of research scientists who developed an acetate plastic, our domestic sun glass industry has expanded astonishingly, and imports have decreased accordingly. Since it is a seasonal industry, manufacturers operate relatively small plants having no connection with the spectacle making industry.

YOU—AND YOUR CHILD'S CAMP

(Continued from page 590)

sick. Parents can render their children's stay in camp a veritable torture by writing about how lonely they are, how the dog or the cat or Grandma or the chauffeur misses the absent one! Parents are at times singularly thoughtless of their obtuseness in thus negativing the good that they paid for when they gave a check for the summer's tuition. Cheerful, happy letters can be wonderful morale builders, and the camp has a perfect right to demand such cooperation from the parents of its campers.

It is quite customary for parents to be asked, when filling in their application blank, to specify what particular skills or personality traits they would like their boy or girl to cultivate while in camp. Now this is all right, and it gives the director and his assistants a good idea of what the child should try to accomplish; but I have seen it lead to a great deal of mischief when taken too literally by overzealous young counselors or even when allowed to dominate the thinking of a director anxious to please parents whom he considered especially important patrons.

The parents of one poor little fellow wrote in that they wanted him to learn to dive before the end of the season. He was large for his years, awkward as is so likely to be the case with rapid growth and terrified of the mingled pain and humiliation involved in making a "belly-buster," as he invariably did when he tried to dive. The young swimming instructor, with the unbending assurance of rightness that belongs so firmly to adolescence, needed only the authority conveyed by this expressed wish to justify him in going into action. Yes, the little fellow finally dived; but if he ever gets over his dread and loathing for this delightful sport it will be only after years of careful, patient reeducation. The parents by their lightly expressed wish almost rendered its fulfilment impossible.

Even more pernicious may be the effect of the parents' request that a child be taught to "be a good sport," that he "learn to take hard knocks like a real man," that he "become a boys' boy and learn to like rough games as a boy should" or something equally fine sounding but indefinite and extremely difficult of attainment. Changing personality traits is not an easy business; nor is it something for every inexperienced worker with boys or girls to try to accomplish.

Character grows slowly, and it is not to be wondered at if a short summer in camp fails to bring about character development that normally takes years to accomplish. Parents are too prone to expect wonders from the camping experience; and whereas old and wise directors may be conscientious enough to refuse to attempt to fill impossible specifications, it is placing unfair pressure on them to demand miracles. And in such cases, it is always the camper who suffers most.

Is it possible to sum up in a few short sentences what it is that camp demands of the parents? I believe that two brief injunctions will cover the ground adequately. First, it asks for complete confidence in its integrity and in its purpose to do its level best for its campers. Parents who cannot summon up this confidence have chosen the wrong camp; they had better rectify their error before it is too late. Given this confidence, the compliance with the few routine requests in the way of advance information and preliminary medical examinations is easy and logical. Second, it asks for a chance to do the best it can for the children, without ill advised interference, for the short two months during which it has them under its care. Considering the fact that the parents have these youngsters under foot for ten months of the year, it does not seem unreasonable that they should give some one else a chance for the remaining two!

If parents can accede to these two demands, there is no reason why a summer in camp should not be the most healthful, wholesome, all-round desirable experience in the lives of their children. Camp is specially designed to meet the needs of girls and boys. Wise parents will not interfere to spoil what it offers them.

MALARIA STILL KILLS

(Continued from page 622)

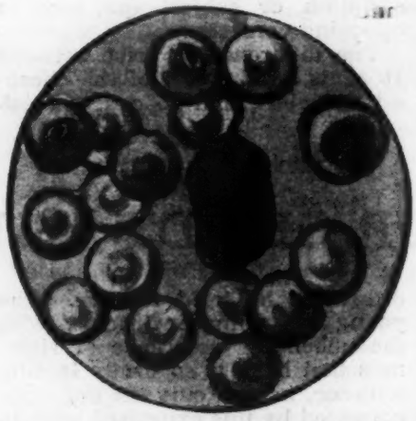
It could not be expected that Ross in his moment of victory would foresee the long struggle ahead. During his lifetime he and others carried on the battle against the malarial mosquito, and yet today, forty years after the great discovery, we are still groping slowly toward a solution of the malaria problem. Both man and the mosquito are to blame. Man is slow to realize the menace of malaria and loath to pay the price of its eradication. And the mosquito is a clever antagonist, only to be thwarted by ceaseless vigilance and painstaking research.

By 1899, Ross had been able to trace the whole history of the parasite in man and in the mosquito. He had shown how the female Anopheles mosquito draws the parasite into her stomach with the blood meal and how after a period of growth the parasite reaches the salivary glands of the insect and is passed on to the next person she bites. The practical task that remained, and still remains, is to prevent the parasite from completing its life cycle. Obviously this can be done in two ways—by eliminating human sources of infection, since the mosquito can spread the disease only after biting some one who has it, and by eliminating the mosquito carrier.

In following out the first line of attack, efforts have been made in various parts of the globe to immunize the population of malarious districts by administering quinine. These efforts have generally proved unsuccessful. Limited funds and the contrariness of human nature have been responsible. It has been found impossible to get a large enough group of people to take enough quinine over a long enough period of time. Moreover, quinine, although invaluable for treatment in the individual case, cannot be relied on to kill all the parasites in the blood. In other words, a person with quinine in his blood may suffer none of the symptoms of malaria and yet may supply the mosquito with parasites which may still be strong enough to cause malaria in some one else.

Le Prince sums up the problem in a few words: "The medical profession fully realizes that to date we have no economical medical means of controlling malaria on a wholesale scale." This means that the malaria problem is a mosquito problem. If malaria is to be eradicated the Anopheles mosquito must be made as scarce as the egret.

That throws the burden of malaria control squarely on the shoulders of the entomologist and the engineer. The entomologist is obviously concerned, but the engineer's part in the solution of the problem may not be as obvious to many. The reason is that it is simply not practicable to catch adult mosquitoes in traps. The mosquito is really vulnerable only in the larval and pupal stages, which it spends in water. Water therefore is the key to the situation. And it is the engineer, the civil engineer in fact, who makes a business of handling water. He builds dams and plans reservoirs. He drains swamps and puts culverts through embankments, designs storm sewers to clear city streets of water and lays out irrigation systems. And the sanitary engineer,



THIS DROP OF BLOOD SHOWS THE MALARIA PARASITE ATTACKING SOME RED CORPUSCLES.

a specialized civil engineer, is interested even in backyard cisterns and in tin cans filled with rain water in vacant lots and slum districts.

The war on the mosquito was successfully opened at Panama under the direction of Surgeon General William C. Gorgas, of yellow fever fame. In various localities in Britain's colonial empire the valuable experience gained in the building of the Panama Canal was promptly applied, but in Gorgas's own country no organized effort of any sort was made to control the disease until about 1913. This was not because there was any lack of malaria, for the whole South was suffering from it.

The major malaria belt includes parts of fourteen states. It extends from New Jersey down the eastern coast in a widening wedge to the gulf. It takes in the eastern part of Texas and extends up the Mississippi River to the lower tip of Illinois and Missouri. A part of California is also included. And even states as far north as Oregon and New York have been visited by epidemics.

In 1913, Henry Rose Carter pointed the way by conducting with conspicuous success the first campaign in the United States for the control of malaria. A permanent program of investigation was initiated by the Public Health Service in 1914; and by 1919, demonstration work had been done in various communities in the South, both by the Health Service and by the Rockefeller Foundation. In California, statewide malaria control work has been under way for more than twenty years. The first county antimosquito campaign in the United States was inaugurated there by Placer County. The state act under which the present work is being conducted was passed in 1915. In 1922, Alabama and Virginia passed regulations for the control of the disease. Since then other states, notably New Jersey, have waged successful war on the mosquito. Delaware has recently initiated a campaign to drain its extensive salt marshes. And New Mexico also has been employing WPA labor with the aim of permanently eliminating mosquito breeding places. WPA labor has also been used for this purpose in other states.

On federal drainage projects directed by the Malaria Investigations Section of the U. S. Public Health Service, an average of 4,000 men were employed in the calendar year July 1934 to July 1935. Up to the latter date, 16,000 miles of drainage ditches had been installed. It was estimated that about one fifth of the population of sixteen states was benefited by this work. The Bureau of Entomology has also been at work on this problem and during the past three years has built nearly 6,000 miles of drainage ditches for mosquito control. Much of this was in the Mississippi valley.

In Illinois, mosquito abatement work is carried on chiefly to make living conditions more comfortable and to protect the value of real estate.

A serious outbreak of malaria which occurred about twelve years ago on Long Island, N. Y., led to an extensive campaign against mosquitoes, which has been carried on with great success.

Few know that New York City harbors within its confines, along with the world's greatest skyscrapers, more than 20,000 acres of salt marshes. Even New Yorkers themselves are generally unaware that their city has been conducting probably the largest organized antimosquito campaign in the country. Several thousand men supplied by federal relief agencies and directed by the city's department of health, have been at work since 1933, as many as 7,500 at one time.

The important role played by the engineer in mosquito control today is illustrated by the work of the Tennessee Valley Authority. The Authority is aware that malaria is common in its area, and it is also aware that its new dams and reservoirs will tend to increase the number of Anopheles mosquitoes and hence to spread the disease unless a number of precautions are taken.

In the fall of 1934, studies were made to determine the prevalence of the disease in parts of the Tennessee Valley. Representative groups of the population were tested by taking blood stains. By placing these under the microscope the investigator can determine whether or not the parasite is present. In a strip a mile wide around what is now the Wheeler Reservoir, 27 per cent of the blood smears showed malaria, and in one county the rate was 60 per cent. Of the diseased specimens, 67 per cent showed malignant tertian malaria. As there remained no doubt as to the seriousness of the menace, the Authority made special organizational arrangements so that malaria control would be considered both in the design and in the operation of the dams and reservoirs under its jurisdiction.

It is a basic fact that preventive measures, if they are to be effective, must be founded on a knowledge of the habits of the particular mosquito concerned. This is equally true of the so-called pest mosquitoes, which do not carry malaria, and of the Anopheles, for the various species differ widely in their habits. The species of Anopheles that is chiefly responsible for spreading malaria in the eastern and southern parts of the United States is Quadrimaculatus, a lover of shallow, quiet water. Its larvae are equally at home along the edge of a large reservoir and in a muddy puddle in some village back yard.

In seeking to eliminate this mosquito it is important that the reservoir basin be cleared of all tree trunks and other material that will float when the water is turned in. The larvae must be deprived of any possible shelter which will make other control measures ineffective. Depressions that will retain stagnant water when the reservoir is low must be provided with means of drainage. The construction schedule for the dam must be planned so that it will be completed in the fall or winter. For if the water is turned into the reservoir in the warmer months and rises slowly through brush and other vegetation in the breeding season, large swarms of mosquitoes will be produced in spite of the use of much larvicide.

And when the reservoir has been filled, the mosquito problem remains. All vegetation and débris must be kept cleared away from the water's edge. Moreover, the water level must never be allowed to remain constant for more than a week or ten days at a time. This means that the dam must be designed so that the reservoir level can be lowered about a foot at regular intervals. As a result many larvae at the water's edge are stranded on the shore, where they die, and others are carried out into deep water, where they are at the mercy of various natural enemies. This fluctuation also helps to control marginal vegetation.

Mosquitoes breed most rapidly in the first few years after a reservoir is filled, before nature's balance is established and the natural enemies of the larvae can become plentiful. This difficulty has been met in some places by stocking with top-feeding minnows. In our own South the most important natural enemy of the mosquito larvae is the minnow Gambusia affinis. In the laboratory, Gambusia just born (they are viviparous) have been seen to eat, by degrees, larvae half as long as themselves. Adult fish, which reach a length of a little less than 2½ inches, have consumed as many as 200 larvae in an hour.

Of course many breeding places of the mosquito are not accessible to fish. Also, the leaves of plants below the surface of the water, as well as their roots, offer protection to the larvae. Engineers are still seeking a satisfactory solution of the problem of controlling aquatic and semi-aquatic vegetation at a reasonable cost. Such vegetation also interferes with the effective use of paris green and oil.

Paris green is now widely used as an insecticide; it has proved efficient under a variety of conditions. It may be applied from shore or from boats, with hand or power sprayers. And it can even be applied from airplanes, as the Tennessee Valley Authority has successfully demonstrated. The airplane is of course best adapted for use where large water surfaces are to be covered, as one flight will spread a lethal dose about a half mile wide. For all these uses, paris green is mixed with some fine dust, such as hydrated lime or, for application from the air, with soapstone, which has the necessary weight. The dust quickly sinks to the bottom, where the arsenic is eaten by animalcules. Hence the dose must be repeated every week or ten days to catch each new batch of larvae. It has been found that all traces of it disappear from a pond within two days. Hence there is no danger of poisoning reservoir water used for drinking. The chief difficulty in using larvicides is that the treatment must be repeated at frequent intervals and is therefore costly.

Some idea of the task which the Tennessee Valley Authority has set itself may be had from the fact that its reservoirs, when completed, will have a total shore line of over 2,300 miles, of which 1,600 miles are in malarious country. Not only doctors and public health officers but the whole engineering profession will be interested in the results of the experimental and control work the Authority is conducting.

The engineering problem of mosquito control is of course not confined to dams and reservoirs. Water used for irrigation must be carefully regulated if mosquito breeding is to be discouraged. Check dams built in hill country to keep soil from being washed away in the spring freshets form pools which mosquitoes do not overlook. In city streets the openings to storm sewers generally contain catch basins in which water stands continuously. Builders of embankments for railroads and highways are prone to take the necessary fill material from borrow pits, leaving depressions in which rain water and ground water collect. And even drainage ditches constructed specifically for mosquito control may become breeding places if they are not carefully graded and lined. As engineers become more "malaria conscious," doubtless fewer new breeding places will be created.

But the malaria problem in the final analysis is up to the people themselves. When there is sufficient popular support for mosquito control work, legislatures and city boards will be forced to enact the necessary measures and to make adequate appropriations. In New Jersey, where the work is administered by voluntary commissions of citizens, effective work is done each year. Chambers of commerce, women's clubs and other community groups take an active interest in the work and vigilantly watch over the expenditure of funds so that it is not easy to divert them to political ends. It is such nonpartisan interest in the malaria problem that will really provide the solution. Trained entomologists and sanitary engineers are not lacking, but they must be supplied with funds and given local cooperation. Government agencies can do much, and they have done much in conducting research and in pointing the way in various areas, but the disease will never be eliminated until the public awakens to its menace.

It would seem that the greatest need is for educational work. This is already going forward to some extent in the schools in malarious areas, but many years will be required to secure the necessary co-

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SCHOOL AND HEALTH (Continued from page 648)

general ill health, loss of energy and pains in the joints. Symptoms disappear when the diet is enriched in vitamin C.

Food Sources of Vitamin C

Among the richest food sources of vitamin C are oranges, lemons, grapefruit (raw or canned), tomatoes (raw or canned), raw cabbage and onions. Also important because of the quantities we eat and the frequency with which we eat them are apples, bananas, carrots and potatoes. Potatoes are such a staple source of vitamin C in some countries, Ireland for example, that a failure of the potato crop invariably means an outbreak of scurvy.

Our richest and most dependable sources of vitamin C are fresh raw fruits. The vitamin C column in the table shows that one-half cupful of orange juice furnishes more than half of the vitamin C yielded by the remainder of the foods. All other items in the column have been calculated on the basis of raw foods. Most of those which are served cooked would lose some vitamin C value in the cooking process although these are by no means devoid of vitamin C. It is evident from the table that the protective foods listed supply sufficient amounts of vitamin C and that all, including the milk, contribute to the total amount provided.

Application to the Classroom

A suitable unit to develop at this point is one on fruit. Most children are fond of fruit, so the problem is chiefly one of making them conscious of the need for having fruit, preferably fresh raw fruit, every day. Often there is a tendency in the home to feel that fresh fruits are a luxury. This is where the school can help in showing that inexpensive fruits should be used in abundance and that tomatoes in any form can be used interchangeably with the fruit.

In the lower grades the children can learn to know the different fruits. When possible they should see the fruits growing on trees and bushes. They can identify others in the market and from pictures. They have already learned that fruit is desirable with breakfast or lunch or both, and this is an excellent time to reemphasize that point. If children bring their lunch or choose it in the school cafeteria, there is opportunity for the teacher to check for reliable sources of vitamin C.

In the upper grades more factual material about fruits may be introduced; and in high school, fruits will have a part in such classes as foods, dietetics and botany. These groups should learn that fruits, particularly fresh raw ones, contain a substance, vitamin C, essential to their good health; that it is necessary to growth, vigor and strong teeth; that fruits are laxative and therefore contribute to a properly functioning body; that fruits contain dilute natural sugars and therefore are more wholesome than concentrated sweets, and finally that one or more fruits should be included in the diet every day.

Reference

EAT TO LIVE. PART I—THE VITAMINS. Reprinted from September 1936 issue of the *Dental Digest* (1005 Liberty St., Pittsburgh).

All in the Day's Work

MARY B. RAPPAPORT
Health Teaching Supervisor
Onondaga Health Association
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In her itinerary among the schools, Miss Rappaport has observed this interesting example of child guidance. How much better it is than the old strict form of discipline! Jimmy is led to see his misdemeanor and profit in a healthful way from his mistake.

JIMMY looked up from his history book. He was bored. Nothing to do. Of course he should be reading the lesson, but it didn't interest him at the moment.

Behind him, Sue was busy studying. Girls made him tired. Besides, they were always playing up to the teachers. Silly things, trying to show off.

He turned around to look at her. The scorn in her eyes was too much. On her desk was a brand new pencil. With a quick movement he seized it, and before Sue could utter a protest he had broken it into several pieces.

Miss Blake looked at him and at the pieces he defiantly held in his hand. "I want to talk to you, Jimmy, when the rest are dismissed."

"Now what?" thought Jimmy. "I supposed she would send me out of the room. Well, anyhow I got even with Sue for acting as if she were so much better than me!"

The rest had gone, and still Miss Blake hadn't said anything. "Gosh! What did she want? I suppose she is waiting for me to say, 'I'm sorry.' Well, I *won't*."

The clock ticked slowly. Miss Blake seemed busy. Jimmy twisted his fingers. Five minutes—ten minutes—the fellows would all be playing. Well, he might as well get it over.

Slowly he dragged up to the desk. "Miss Blake, I am sorry I broke Sue's pencil."

"Are you, Jimmy? Then what are you going to do about it?"

Blankness. Then a bright idea raced through his head. "I'll tell *her* I'm sorry."

"That's not enough, Jimmy. Sue hasn't a pencil now."

Now what had he better do? He had a pencil that was partly used. Anything to get away. "I'll give her my pencil."

"That will not do, Jimmy. Sue's pencil was new. Yours is used."

"But, gee, Miss Blake. I haven't any money to get her a new pencil."

"Can you earn some?"

Jimmy was stumped. He didn't know. He didn't get any pennies except for birthdays and things like that.

"Miss Blake, I've never earned any money."

"I have some work that a big boy like you could do, if he wanted to earn money, but it will mean giving up some time with the boys." Miss Blake's voice was soft.

She was swell—not mad or anything. Besides he wouldn't like it if any one broke his pencil.

"What shall I do, Miss Blake?" said Jimmy, ready to work.

To Contributors:—*The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

STUDENT HEALTH CONTEST

"No impression without expression" is probably one of the soundest principles of effective teaching. It recently prompted the Woman's Auxiliary to the Bowie Miller County (Texas) Medical Society to promote an essay contest in schools to which the auxiliary donates HYGEIA subscriptions.

Mrs. S. A. Collom Sr., HYGEIA chairman of the auxiliary, sends the three best essays on the value derived from these subscriptions. The writers of the prize winning essays are 14 years of age. Their letters follow: *(Continued on page 663)*

A Charming Cosmetic Effect

☆

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Every Tuesday night. NBC Network.
See local paper for station and time.

The bodies of 10 men contain less iron than there is in a ten-penny nail. Yet without this tiny amount of iron you could not live—Believe-It-Or-Not.

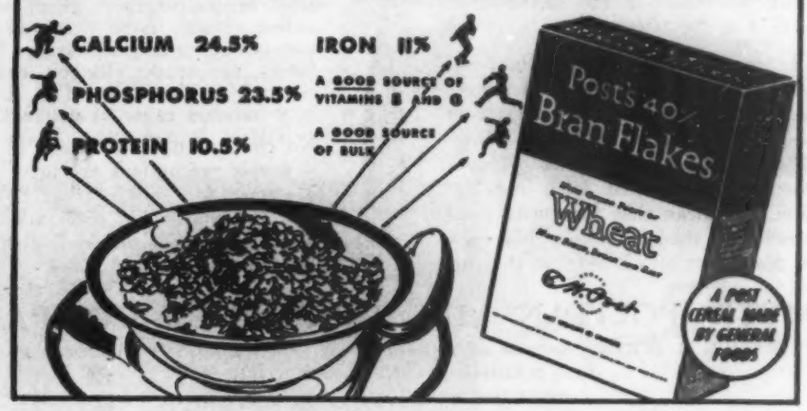
Post's 40% Bran Flakes are one of the richest cereal sources of this vital mineral. And, in addition, a serving of this delicious cereal, with milk or cream and sugar, provides other valuable food essentials the human body requires—carbohydrates, proteins, fats, and vitamin B_1 with small amounts of vitamins A and G.

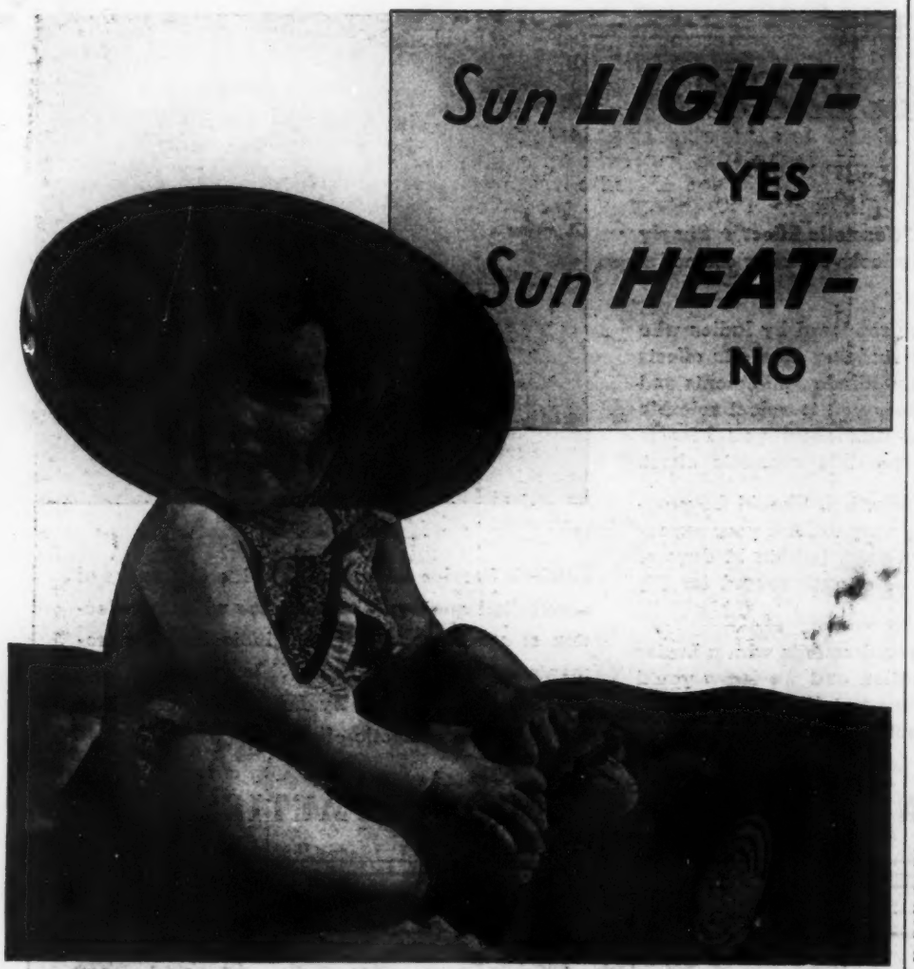
Millions prefer Post's Bran Flakes for their *different*, nut-like flavor alone. Yet this popular cereal, eaten daily, helps supply needed bulk. *And adequate bulk is an essential for keeping fit.*

Why not enjoy a bowl of Post's Bran Flakes every morning?

HERE IS THE FOOD VALUE OF A DISH OF POST'S BRAN FLAKES AND MILK

Each percentage represents the proportion of the *total day's* requirement which a single serving of this delicious cereal affords. (Based on ¾ cup of Post's Bran Flakes and ½ cup of milk—4 oz.)





MOTHERS have been told that their children must have sunshine . . . that frequent sun baths are necessary for the development of strong bodies. But perhaps some mothers may not realize the vast difference between the *light* from the sun and the *heat* from the sun.

Sunlight carries the beneficial ultra-violet rays that put healthy color in the cheeks of boys and girls. But when the thermometer climbs over 80 degrees, keep your children out of the burning rays of the sun. Too much sun*heat* may be dangerous. On such days let your boys and girls sunbathe before 10 in the morning, or after 4 in the afternoon.

In hot weather, brimmed hats—of straw, white or light-colored fabrics—will help keep the hot sun from scorching down on children's heads. The fact that a young baby's eyes should be protected from the sun does not mean that his entire head should be shaded. Cover his eyes, or place him on his side, so that his face will get the benefit of the sunlight but the strong rays will not shine directly into his eyes.

During their first year, babies are particularly susceptible to heat and humidity. There are more deaths caused directly or indirectly by excessive heat before the first birthday than during any other single year of a child's life.

Why is the scorching *heat* of the sun dangerous to children? It lessens appetite, lowers vitality, and may produce fever. It often overexcites them, makes them sleepless, faint and ill.

Strange as it may seem, a sudden drop in temperature which brings welcome relief from excessive heat may not be entirely a blessing. Many babies are made sick by chilling, especially in the night. This chilling is a common cause of diarrhea.

No child need be overcome by heat if simple precautions are used. The Metropolitan leaflet "Heat Exhaustion and Sunstroke" gives additional information. For a free copy address Booklet Department 738-Z.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, *Chairman of the Board* LEROY A. LINCOLN, *President*

ONE MADISON AVENUE, NEW YORK, N. Y.

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QUESTIONS and ANSWERS

(Continued from page 654)

nite fuel value and would yield calories in the body. The eating of inulin without a previous change into levulose is nonfattening, but so also would be the eating of paper pulp or the cellulose product which is used for cigar wrappers.

Eyeglasses for Farsightedness

To the Editor:—I have a girl of 13 who has worn farsighted glasses since she was 6. Her eyes have improved so much that now the doctor who first fitted her glasses and has changed them from time to time says they are so near normal that she will not need her glasses any more. He said also that she may become nearsighted unless she stops using her eyes for close work for a period of time until the sight becomes set. By using drops in the eyes, we may allow her to attend school in the fall. Another doctor says it is impossible for the farsighted eye to change at all and that she still needs glasses.

Mrs. D. T. W., Oklahoma.

Answer.—Generally a girl who has needed glasses from 6 to 13 will need them as long as she goes to school. If there is danger of her becoming nearsighted, it is certain she needs them. There are no drops that will take the place of glasses. Some doctors who can fit glasses think they do not need to know anything about the body and general health to give advice about the need of glasses; and some who cannot fit glasses think they can give advice about them from what they have heard other people say. It is best to consult an eye physician who has had a regular medical education at a good medical college and has after that made a special study of the diseases and defects of the eye.

Correction

In HYGEIA for May 1938 appeared a statement "The Council on Pharmacy and Chemistry of the American Medical Association rejected 'Amertan,' which represented an attempt to incorporate tannic acid and merthiolate in a cream." This should have read, "The Council . . . declared 'Amertan' unacceptable for 'New and Nonofficial Remedies' but stated 'The firm was informed that the product would be acceptable if marketed under an informing name such as 'Tannic Acid Merthiolate Jelly.'" The product is not a cream as erroneously stated.

STUDENT HEALTH CONTEST

(Continued from page 660)

How "Hygeia" Has Helped My Diet

By GEORGIA PAULIS

Health is of so great an importance that without it we are unable to enjoy living. "Hygeia" is a magazine devoted exclusively to health subjects, such as diet, exercise, precautionary measures for the prevention of disease, and all of the health and hygiene problems that the individual and community have to face. All of the articles of this magazine are written so clearly that even children are able to derive great benefit from them. "Hygeia" is very useful to the parents in the rearing of a family.

Diet more than any other one thing is responsible for our health. From articles in "Hygeia" I have learned that by proper food we may check on or overcome some types of diseases. Proper diet, when used long enough, will also help to overcome deformities.

"Figure control," except in glandular trouble, can be attained if we eat the correct food in the right quantities. It is not necessary for one on a reducing diet to be hungry, if his meals are properly balanced. In the same way, one may gain if he is too thin.

"Hygeia" warns us against "food faddists" and "quacks." They really are a public nuisance and do much to harm people. "Hygeia" is to be complimented for exposing them.

The Importance of Health Knowledge

By ROSE MARY WHELAN

It is not possible to overestimate the importance of health knowledge. Children should be taught from their earliest years the value of stalwart, healthy bodies.

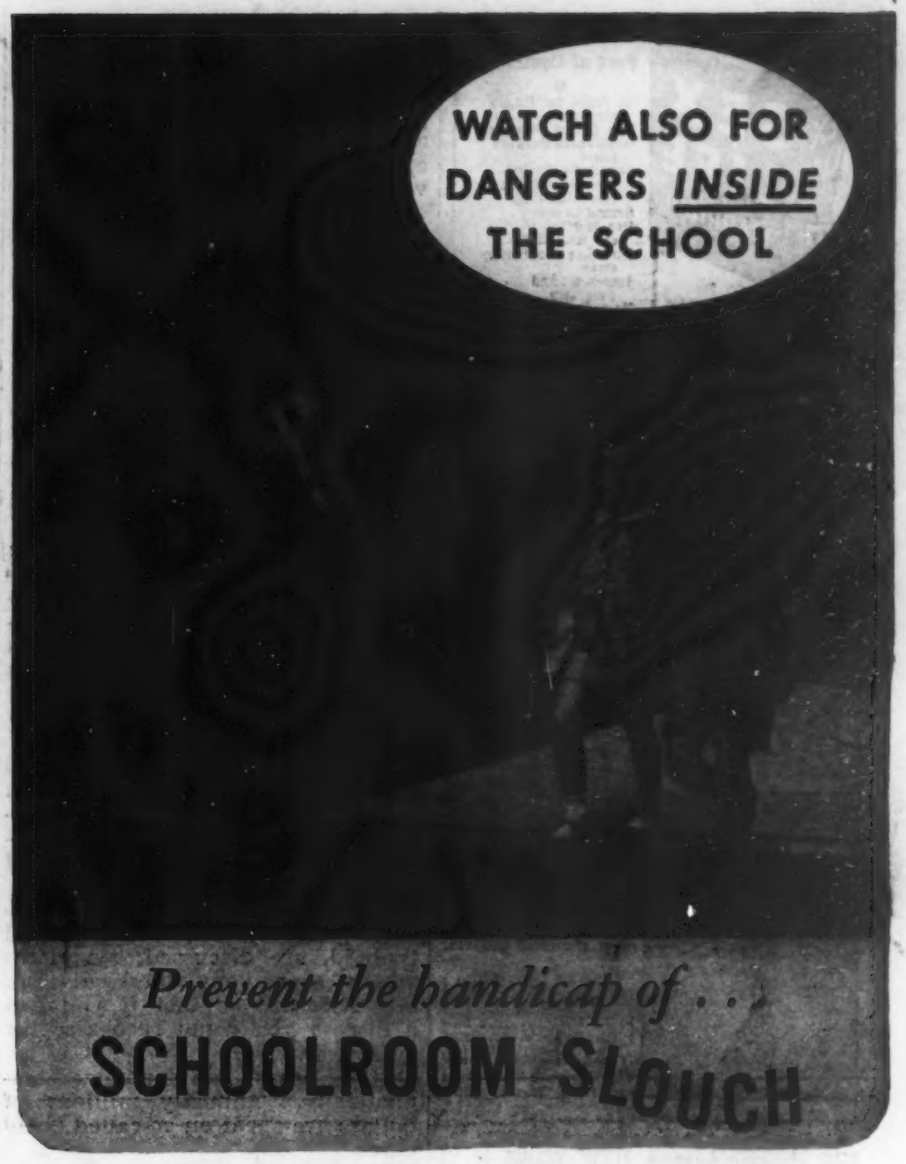
First of all, we should learn to keep our bodies in perfect condition. Careful attention should be given to balanced daily diet. Well nourished bodies are more able to throw off the attacks of disease germs.

Each and every one of us should acquaint ourselves with all the information we can obtain regarding the prevention of disease.

The study of hygiene in our schools has been a valuable factor in reducing the mortality rate in our country.

Knowing the correct thing to do when an emergency arises in the home, often saves the life of a patient. This is particularly true regarding people in rural sections when a physician must travel a long distance to attend them.

Our physicians and surgeons are working tirelessly to promote the



A SAFETY-CONSCIOUS age can find much to do inside the school as well as at street intersections. Particularly in the matter of seating.

Although great advancements have been made in student welfare, many obsolete, ill-fitting desks and seats still remain to handicap our growing boys and girls. Sitting day after day in these seats often leads to a habit known as *Schoolroom Slouch*. Such poor posture may vitally affect the health of a child.

You can make a real contribution to student welfare by encouraging the installation of American Universal Better Sight Desks.

These desks, adjustable to each child's needs, make it easy and comfortable to sit correctly. Posture is aided and sight protected. Use your influence to secure this modern contribution to better health and better school work.

American Seating Company
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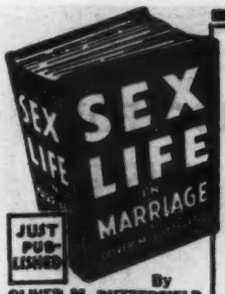

By OLIVER M. BUTTERFIELD
former staff member Columbia University. Foreword by S. J. Kleegman, M.D., Asst. Clinical Prof. New York University.

The author, whose article on Marriage in Reader's Digest drew an overwhelming response from men and women in every walk of life, here presents sound, simple, practical, definite, and detailed information about sexual relations in marriage.

"Best manual to give."
—Ohio State Medical Journal

Part of Contents

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Sexual Awakening
Attitudes and Emotions that Help
Sexual Organs
Pre-Marital Physical Examination
Planning the Honeymoon
Impotence and Frigidity
Technique of the Sex Act
Sexual Adjustment
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Charts & Explanations

The book includes also a number of excellent anatomical diagrams, by a distinguished authority on human sex anatomy.

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COMES OFF PAINLESSLY—LEAVES NO MARKS

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SEALTAPE

well being of the human race. Interesting articles are to be had in all the leading magazines. The health magazine, Hygeia, for example, contains splendid items. These are making parents more and more appreciative of the inestimable value of health knowledge.

What I Derive from Reading Hygeia in My Health Knowledge

By GLENN BURCH

The Hygeia magazine is published by the American Medical Association, a group of select and well known doctors.

Costing only twenty-five cents an issue, it may save you many times that amount.

Knowledge which is otherwise unknown, is stated in clear, understandable language in this magazine. This magazine is not published for the sales merely, but is published to give the public as a whole, some knowledge of the latest and most commonly accepted opinions on health problems.

Articles in this book pertain to health and some safety items. Every article is enlightening. Exercises which are beneficial in developing muscles are illustrated fully.

Common diseases such as diphtheria, tuberculosis, smallpox, and typhoid, are discussed; symptoms which accompany these diseases are discussed so that if you had a disease you could recognize the symptoms.

"Cold cures" are denounced emphatically. Annually millions of dollars are spent on so-called "cold cures."

This magazine tells how to keep physically fit.

It tells of cases where patients suffering from severe colds, have been cured as soon by eating properly, having fresh air and sunshine, as they were by taking harsh "cold cures."

Hygeia is not highly advertised. There is nothing startling in this magazine, but unadorned facts. If you subscribe for this magazine, you have expert medical advice for a year for only $2.50.

EXERCISE

(Continued from page 604)

ther physical recreation, puts on needless fat for his heart to pump blood through as he grows older, and misses much joy that might be his.

Although this particular Brutus is a fictitious gentleman there are many Brutuses (or Bruti) trying to go back to exercise as this one did without benefit of intelligent thought, without remembering two important facts: first that bodies which have been without vigorous exercise for years are not the same in 1938 as they were in 1923, and second that it isn't reasonable to attempt the exercise for a month in a day. No one would try to eat a month's food at a meal. Granted that one can get along better without exercise than without food, it still is not wise to go on an exercise binge, for exercise is more or less of a daily need if it is good for anything. Nevertheless how many people have the notion that a two weeks' vacation with exercise will carry them through fifty weeks without it and keep them fit and happy? It simply can't be done.

Nor is it sense for the ex-athlete to scorn mild exercise because once he could take and enjoy it in violent form. He might better say with Saint Paul, "When I was a child, I spake as a child, I understood as a child, I thought as a child; but when I became a man I put away childish things."

If the doctor can tell only within broad limits how much exercise any given patient or consultant should take, is there any way in which said patient or consultant can tell more accurately the optimum amount for him? Answer—there is. He can tell from his own feelings and reactions without paying a fee to anybody. And here is a general rule: He should feel better rather than worse both immediately after the exercise and several hours after. If he feels exhausted, weak or shaky immediately after, he has exercised too violently or too long. If he cannot sleep that night or feels below par the next day without other evident cause, he may have done too much and should try a smaller dose the next time.

Warning signals during the exercise may be fatigue, a feeling of tightness or discomfort in the chest, or breathlessness; and perhaps the most important of these is the last. The middle-aged man will do well not to continue his activity to the point of being out of breath—having to pant and puff and pause to "get his breath." He may do himself physical harm, and at any rate, it isn't much fun to be out of breath, and fun is a big element in beneficial exercise. Let it be repeated that exercise of speed for a considerable time is to be regarded with the utmost suspicion and distaste.

A man of moderate intelligence who is exercising two or three times a week or, better, every day, can soon find out for himself with the aid of that oldest and best of teachers, experience, just about how many sets of tennis, how many holes of golf or how many hours of horseback riding make him feel better and happier. If he is not that intelligent it may be that his wife can tell him by intuition or some other means. Frayed nerves, the retort discourteous and domestic profanity rarely result from proper amounts of exercise—except in golf.

[NOTE.—Part 5 of Dr. Reed's series on exercise will appear in the August issue.]

MALARIA STILL KILLS

(Continued from page 659)

operation from the population as a whole. For instance, in the Mississippi valley it is the custom in small towns for the people to collect in the square on Saturday night to do their shopping and meet their friends. This happens at just the time of day when the female Anopheles likes best to do her biting, and the custom gives her every opportunity to spread the disease, as both sick and well are assembled together. Such problems as this will not be solved overnight.

No discussion of malaria in the United States would be complete without some mention of the economic problem. It is unfortunately true that the sections in which malaria is most prevalent are generally the poorest. Whether malaria causes the poverty or the poverty encourages malaria is not a very profitable question. Certainly the disease does not encourage energetic and ambitious effort, and the life of the poor tenant farmer is such as to make him particularly susceptible to the disease. Farming populations in sparsely populated sections are often highly infected. This means that the per capita costs of control are proportionately high. And even if the costs were low the people in many farming localities would be unable to pay them. One's view of what should be done under such conditions will depend on one's whole social and political philosophy. In any case the solution is not simple. But if a solution is to be found this economic difficulty must be recognized.

Various "hard-boiled" industries in the malaria belt have found it cheaper to pay for malaria control measures than to suffer the endless labor shortages and inefficiencies

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MEET MY FRIEND PATTY,
says Johnny Pineapple from Hawaii
Patty lives in a big house on a hill in Honolulu, on the Island of Oahu, overlooking the beautiful Pacific.
She's only seven months old, but you should see her scamper across the lanai* —on her hands and knees, of course— when she sees the blue Dole can!
Ever since Patty was a tiny baby she has had Dole Pineapple Juice to drink every day. The Doctor told Patty's mother that Dole Pineapple Juice from Hawaii was full of natural fruit sugars and contained minerals, and Vitamins A, B, C.
Of course, everybody who lives in Hawaii knows that Dole Pineapple Juice is the natural, unsweetened juice of fresh, ripe pineapples, and that it's swell to drink before breakfast, between meals or any other time.
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PINEAPPLE JUICE
Aloha—and look for Patty and me next month.
*Lanai is the Hawaiian word for porch.
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He may lead a normal life, grow strong and learn in the sunshine at

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Individual instruction for backward and problem students of any age. Separate building for boys. Epileptics accepted. G. H. Marquardt, medical director. W. H. Holmes, consultant. Gerard N. Krost, pediatrician. 80 Geneva Rd., Wheaton, Ill.

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PLEASE MENTION HYGEIA
WHEN
WRITING ADVERTISERS

which always result from chronic malaria among the force. Malaria control is really sound economy. When this fact becomes widely enough recognized, funds—local, state or federal—will be found for the work.

In the meantime, malaria is spreading. Farmers retreating from the malarious lowlands take the disease with them into the hills. It may soon reach serious proportions in places where it is now a stranger. In *Civil Engineering* for July 1936, Dr. Le Prince made the alarming statement that in some parts of the South the malaria sick rate had doubled in the past three years.

One quotation among many available ones from world authorities on malaria may be of interest. In his recent book, "An American Doctor's Odyssey," Dr. Victor Heiser, world traveler for the International Health Division of the Rockefeller Foundation says: "Among all tropical diseases malaria is supreme. In my experience it is the most persistent, the most destructive, the most widespread, and the most difficult of them all to control." For any well informed person to take an attitude of indifference toward this disease is today impossible. The ancient Greeks and Romans, whose cities fell into ruin in the wake of malaria, had at least the excuse of ignorance. We have no such excuse.

LYING

(Continued from page 655)

and he forgives rapidly, even if the forgetting process is slow.

Henry Smith's accomplice, Bobby, was seen using an expensive pencil. He had found it, he said. When several days later his father noticed a fountain pen among the boy's belongings the little fellow stated that he had traded his pencil for the pen. The statement sounded unconvincing, and when further explanation weakened, the boy was punished. The following day the partnership was dissolved. Bobby's parents were intelligent enough to gain his confidence and thus relieve him of a burden of guilt by a true statement of his childish transgressions.

With Henry the situation was different. His parents were at first incredulous to the stories of their child's behavior, but as evidence accumulated they became convinced of the reality of their problem. Hazily they recalled that about three months previously Henry had been confined to bed for several days with some vague complaint. His sleepless nights during that short period were explained by the fact that he had slept so much during the day. Mrs. Smith now recalls that somehow the boy has not been the same since. He has changed not only in conduct but even in physical appearance. A photograph taken less than a year previous to this illness substantiates this opinion.

Although Mrs. Smith states that this vague illness was not severe enough to call her physician, her description and what followed indicate that Henry was at the time suffering from encephalitis lethargica, or sleeping sickness. This disease not infrequently leaves its victim with a changed personality. Henry is not a bad little fellow. He is fully conscious of his asocial conduct. He weeps every time that his parents experience embarrassment through his behavior. He becomes despondent and repentant over his lack of self control; yet the very next day he finds himself in a new scrape. His prospects for reform are not bright, although recent advances in psychotherapy and other forms of treatment suggest that a cure may yet be accomplished. Unfortunately his parents, at the present time, are so discouraged that they are reluctant to submit their boy to the newer methods of therapy. "And we had such high hopes for our boy," the mother moans inconsolably.

[NOTE.—The fourth article in this series on bad habits in good children will appear in the August issue.]

I have discovered that the flu is both affirmative and negative. Sometimes the eyes have it and sometimes the nose.

—*William Lyon Phelps.*

SEX BEHAVIOR IN MARRIAGE
by CHARLES A. CLINTON, M.D.

AT last . . . a book of sex technique that treats the subject frankly and in detail without offending . . . A medical authority proves that it is possible to cast aside all pretense and false modesty and discuss the most important single factor in human life in an intelligent, instructive manner.

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FAVORABLY REVIEWED BY
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The Medical Times
The New York Physician

■ It is the purpose of this book to give exact instructions for marital procedure. . . . Dr. Clinton's long years as a physician and wide clinical experience merit your confidence.

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FOOD FACTS AND FALLACIES (Continued from page 643)

GENERAL MILLS, INC.
Minneapolis, Minn.
October 31, 1935

Dr. Morris Fishbein, Chairman
Committee on Foods
American Medical Association
535 North Dearborn Street
Chicago, Illinois

Dear Doctor Fishbein:

These days a business executive finds so many occasions for expressing dissatisfaction that it is a rare pleasure to feel impelled to write a letter expressing complete satisfaction.

Upon reviewing the experience of nearly five years which our company has had with your Committee through submitting, studying and discussing with you all of our major products and their advertising, we can truthfully state that during this period no relationship with any individual or group on any subject has been more pleasing and helpful.

Of course, we have occasionally disagreed. This has been in the nature of the exception that proves the rule, and where these disagreements have arisen, we have respected your Committee even more in consequence, and we know they too, have appreciated our problems.

We feel that from this close cooperation with your Committee we have gained distinctly in three ways:

In the first place, we have replaced considerable superficiality with a definitely growing desire for complete knowledge and facts on the part of our advertising personnel and advertising agencies in respect to all nutritional aspects of our products. We feel that this has been a definite educational advantage, not only to us but consequently to the public which we serve. It makes us feel much surer of our ground and gives us greater pride in our job and our accomplishments.

In the second place, we feel that we have definitely benefited and are increasingly benefiting in our relations with the public and the trade. The Seal of Acceptance of your Committee on all of our principal products and on the advertising of those products, is, we feel sure, a growing asset. This is particularly true today when there is discernible in many quarters a growing skepticism concerning the merits of certain products of industry and particularly the advertising claims made for these products.

Thirdly, and by no manner of means of least importance, we have been enabled to start what we believe to be sound progress in respect to presenting our products and their true merits to a large group of professional people, both in the medical profession and related fields, who have so much influence upon the diet of the Nation. We have been able, with the knowledge we have gained through work with your Committee, to develop many messages backed by your Seal, which we have presented primarily through the pages of *The Journal* of the American Medical Association and HYGEIA. While prior to our cooperation with your Committee we did not consider these journals as an integral and important part of our publicity program, today we consider this phase of extreme importance and have consequently enlarged our schedules manyfold.

Probably there will continue upon rare occasions to arise issues upon which we may disagree. In such event we both shall state our position frankly. However, we cannot refrain from expressing in this letter the unusual satisfaction which has come from this relationship and our hope and belief that cooperation with your Committee is a fundamental public service.

Sincerely yours,
(Signed) D. D. DAVIS.

Fads, fancies and fallacies are habitants of the forest of ignorance and must succumb to advancing popular knowledge. If they can be deprived of the economic advantage of untruthful commercial advertising few of them will present much of a problem, and if you want more information about them you can turn to many books, like Bogert's "Nutrition and Physical Fitness" and Fishbein's "Fads and Quackery in Healing." An authoritative pamphlet entitled "Facts, Fads and Frauds in Nutrition," prepared by Mitchell and Cook and published by the Massachusetts State College, contains the following quotation from Dr. L. Jean Bogert:

The fact is that food fads flourish because people want them. It makes little difference to the food faddist whether the particular dietary cult he follows incorporates a few grains of truth along with the dross or not; he is attracted to this cult because it satisfies some craving to try a novel dietary, to be in fashion, to attract attention by being unusual in diet, or from the desire to do something about his health. He may benefit by the simpler diet, more regular living, and especially through the belief that he will be helped, but this proves nothing as to the theories on which the cult is based, and the same results might have been more painlessly attained by other means. The food faddist represents a psychological type and often drifts from one dietary cult to another; as long as we have this type of people in such large numbers, diet fads and cults will persist and will be profitable to their originators.

The way to a saner and better balanced judgment about diet lies, of course, through education as to the facts about foods and the body. Knowledge casts out fear and the food cultist trades on fear. Everyone should know the elementary facts as to what constitutes an adequate and balanced diet, along with a few commonsense rules about how diet should be adapted to body build, and how it needs to be altered to cope with adverse conditions like constipation or indigestion. Then people need no longer be bewildered as to what kind of diet to follow, nor agitated by food fads and fancies.

In the pamphlet mentioned, reference is also made to a recent article published in *Fortune* (May 1936, p. 86) and considered to be one of the best popular food articles of recent date. Its author comments that:

More food notions flourish in the United States than in any other civilized country on earth, and most of them are wrong. They thrive in the minds of the same people who talk about their operations; and like all mythology, they are a blend of fear, coincidence and advertising.

The general principles of good nutrition are the "rules of the road" of the highway of nutrition. If you will investigate, you will find them expressed in essentially the same terms by Ex-President Hoover's White House Conference on "Child Health and Nutrition," by the Mixed Committee on the Problem of Nutrition of the League

Training is FUN with LITTLE TOIDEY
The secret of training the baby is keeping him comfortable.
Little Toidey
Why do babies like Little Toidey so well they use it without a squirm or cry?
Toidey & Traveler
Why do babies function almost automatically when placed on Little Toidey?
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Booklet TRAINING THE BABY attached to every genuine Little Toidey, tells why. Leading Juvenile Furniture Sections (usually in Infants' Departments) have extra copies of this book, free for the asking . . . or write us.
JUVENILE WOOD PRODUCTS, Inc.
Gertrude A. Muller, Pres.
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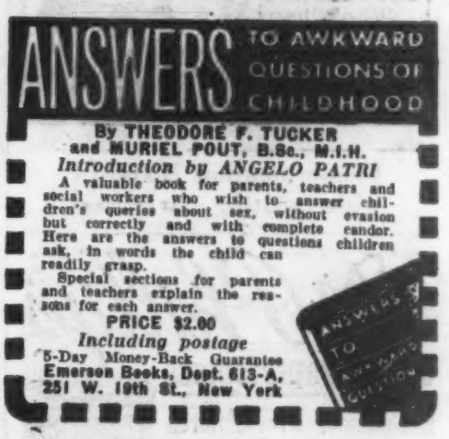
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A valuable book for parents, teachers and social workers who wish to answer children's queries about sex, without evasion but correctly and with complete candor. Here are the answers to questions children ask, in words the child can readily grasp.
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Satisfactory Results or Money Refunded
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ACCEPTED FOODS

This department is a useful guide in the selection of foods of quality, advertised with truthful claims. All products in this section as well as any others advertised elsewhere in HYGEIA stand accepted by the Council on Foods of the American Medical Association, and are entitled to bear its "Seal of Acceptance." The foods listed here are but a portion of those accepted by the Council. If you desire information regarding any other food product, you are invited to write to HYGEIA.

VAN CAMP'S Evaporated Milk

Pure Cow's Milk with more than half the water removed by evaporation. Sterilized, Homogenized. Uniformly High in Quality.

VAN CAMP MILK CO.
Indianapolis, Indiana

A *new* SOURCE of *good* GINGER ALE
MADE WITH
"CLOVERDALE ...water SPARKLING!"

Admittedly, water is the chief ingredient in any beverage. The use of Cloverdale Sparkling Spring Water gives Cloverdale Ginger Ale a distinctive zest and sparkle. You will enjoy it. Also Cloverdale Sarsaparilla, bottled at spring. If not available in your community, write for information

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Office: Baltimore, Md.
Plant: Hewville, Pa.

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Dr. Phillips
CITRUS FRUIT JUICES
Recommended for Children
as a Source of Vitamins A, B and C

Dr. Phillips Orange and Grapefruit Juices and Grapefruit Hearts are uniformly rich in vitamin C and always full of flavor. Tree-ripened, they are canned fresh from the grove under the most modern scientific and sanitary conditions. Easy to serve at any time, anywhere. Get several cans today.

DR. P. PHILLIPS CO., Orlando, Florida

WHITE BREAD

An interesting set of questions and answers in booklet form. A copy may be obtained free by request to the

AMERICAN INSTITUTE OF BAKING
1135 Fullerton Avenue . . . . Chicago

of Nations and by all other accredited authorities in the science of nutrition. They are:

1. Eat more liberally of what McCollum named "the protective foods," milk, cream, eggs and cheese, green vegetables and the principal fruits. The American diet probably is sufficiently supplied with meat, potatoes and other tubers, dried beans, peas and nuts. You probably could do with somewhat less flour and much less sugar.

2. Go in for variety in purchasing food. Not everything is known about what is essential. The principal food factors have been isolated, but there are others not yet identified. Safety lies in diversification of the diet, and danger attends restriction. No one food is a perfect food.

3. Watch your weight. Obesity shortens life expectancy and favors the development of diabetes and other so-called degenerative diseases. If the body weight lies above the standards set by the actuarial tables of the life insurance companies, limit the intake of fats, starches and sugars but not that of milk or other protective foods.

4. Don't expect too much, even of a perfect diet. Other things than food can cause ill health. The rules of the road are designed for community health and may need modification to meet the requirements of certain individuals.

Basing it apparently on a suggestion made by Miss Gillett, the United States Food Administration during the World War issued as a part of its educational program a simple suggested family food budget. This, according to Professor Sherman, was essentially as follows:

Divide your money in fifths and spend:
- ⅕, more or less, for vegetables and fruits;
- ⅕, or more, for milk and cheese;
- ⅕, or less, for meats, fish and eggs;
- ⅕, or more, for bread and cereals;
- ⅕, or less for fats, sugar and other groceries and food adjuncts.

The suggestions are still good, and as C. C. and S. M. Furnas comment in their excellent popular guidebook, "Man, Bread and Destiny," they will "turn no faddist from his flare, nor interest those trying to tune in on the occult, for the summary contains nothing spectacular, nothing to attract other peoples' attention, nor is there a single crazy idea in the lot."

In the report of the Committee on the Problem of Nutrition of the League of Nations, it is shown that the levels of food consumption depend primarily on two factors—the amount of real income at the

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THE SUN-RAYED CO., FRANKFORT, IND.

Church's Pure Natural Grape Juice

made from properly ripened grapes. Contains no added sugar, water or other substance whatsoever.

Free from the excess acid of unripened fruit.

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ASSURED HIGH QUALITY

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DO YOU LIKE GOOD CREAM CHEESE?
HAVE YOUR DEALER SHOW YOU THE NAME
Breakstone's
WHEN HE CUTS YOUR ORDER

JELKE'S GOOD LUCK MARGARINE
Dated for Freshness
AND APPROVED

America's Favorites

WHOLESOME! DELICIOUS!
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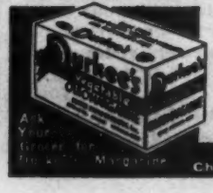


Purely American Vegetable Margarine, an "All-American" product, is nutritious, satisfying, an ideal food for cooking, baking, frying and general table use.

Durkee Famous Foods
Chicago, Ill. Norwalk, Ohio

disposal of the family or individual and the intelligent use of that income to meet food requirements. Where income is adequate the problem is one of education. In America, with our higher standards of living, the important problem obviously is education, and the advertisers of foods, without hurt to themselves, can help immensely, if they will, in solving this problem of education.

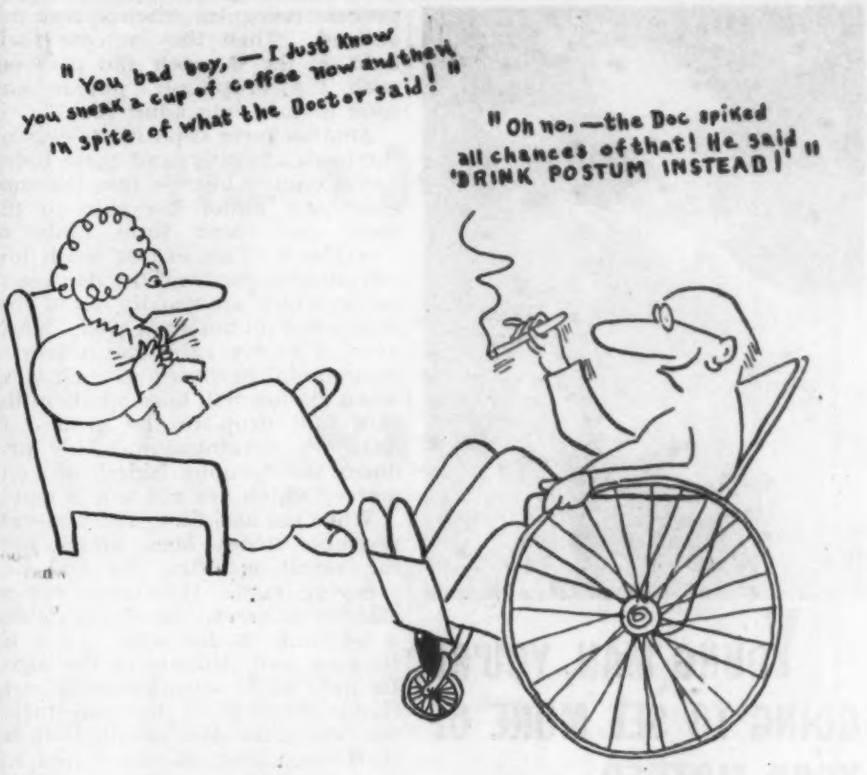
Truthful food advertising provides people with the information they need in order to understand nutrition, and better nutrition unquestionably will benefit our people immensely. On the other hand, incorrect or fraudulent advertising works immeasurable harm. Therefore I should like to add one more rule to the "rules of the road." It is to follow the highway markers placed on the package labels and advertising matter of those products which have been accepted by the Council on Foods—the Seal of Acceptance. When purchasing foods, give preference to brands that bear this label. Thereby you will protect your family; also you will help to convert food advertising into a socially beneficent institution carrying truly educational information about foods and nutrition to the consciousness of those less able than you are to protect themselves from prejudice, fads, fancies and fallacies.

PARASITE TRICKS

(Continued from page 649)

occasionally to man. They are concerned in the transmission of tularemia. In the tropics they carry a bloodworm that is quite common in some places, usually called Loa loa, or the eye worm (Filaria oculi).

Bot flies (Gastrophilinae) are well known, but their danger to man is not generally realized. There are several that seem to specialize in their methods of attack. There are cattle, horse and sheep bot flies, and each prefers its special host but is not too particular if that is not available. The ordinary bot fly seen around stable yards deposits its eggs on the legs or flanks of animals, where they are taken into the mouth when the irritation of their presence causes the animal to lick or bite the part. These flies are so rapid in action that it is difficult to follow their movements, but at times they undoubtedly deposit their eggs in the mouths of animals, where they develop partly and are swallowed in due time. In the stomach and intestines they remain for some months and by some mysterious


"You bad boy, — I just know you sneak a cup of coffee now and then, in spite of what the Doctor said!"
"Oh no, — the Doc spiked all chances of that! He said 'DRINK POSTUM INSTEAD!'"

SUPPOSE YOUR DOCTOR said: "Why don't you give up coffee?" Wouldn't you find that pretty hard advice to follow?

Yet "giving up coffee" might be the very thing you needed. For, while a great many people can drink coffee without ill effects, a good many others find that coffee disagrees with them ... and *you* may be one of these.

But, if *your* doctor finds it advisable to say: "No coffee!", we hope that he will make it easier for you by adding: *"Drink Postum instead!"*

For Postum's delicious flavor, full-bodied and satisfying, and its tempting aroma make friends so quickly that forbidden beverages are soon forgotten. And it is equally delicious hot or iced.

And—best of all—Postum contains no caffein, no stimulant of any kind. It is simply whole wheat and bran, skillfully roasted and slightly sweetened.

Postum comes in two forms: Postum Cereal, the kind you boil or percolate, and Instant Postum, made instantly in the cup. Either way, you will find it delicious, very easy to make, and extremely economical. (It costs only about ½¢ a cup.) Postum is a product of General Foods.

process recognize when spring has arrived. Then they release their hold on the stomach and pass out with the droppings, pupate and soon mature into adult flies.

Another form deposits its eggs on the heels of cattle, and these hatch and promptly burrow into the muscles, pass under the skin to the back and there form boils or "warbles." This causes much loss to cattle raisers from the damage to cattle, which are usually out of condition and do not grow well. Moreover, it nearly ruins the hides for commercial purposes, as each larva when mature will bore a hole in the skin and drop to the ground to finish its development. This produces the "grubby hides" of commerce, which are not worth much.

When the heel flies, which closely resemble honey bees, attack man the result is often the so-called creeping rash. Ranchmen are so afflicted at times. One victim noted a swelling on his arm and a little pain and stiffness in the wrist. He paid slight attention to it, as he frequently slept in the open during the heat of the day, usually with his shirt open and sleeves rolled up. He attributed the stiffness to chilling. The symptoms soon disappeared, but some days later a swelling appeared in the left groin. Then a creeping eruption started down the inside of the left thigh to the knee, crossed to the external surface and up the thigh, passed to the right groin and on to the right elbow, where it disappeared. Some days later a swelling appeared under his left shoulder blade, and from this location a mature larva of the heel fly was removed.

One bot fly damages man frequently enough to be of note, and almost every physician practicing in the country sees the results of such attacks. This is the sheep bot fly (Oestrus ovis), which does not lay eggs but deposits living larvae ordinarily in the nose of sheep. Here they crawl into the cavities of the sheep's head. In due time they mature and drop to the ground but cause a good deal of damage in the process. Occasionally the fly seems to make a mistake, and such larvae are deposited in the eyes or noses of sleeping children or even of adults. In one such case a little girl felt a sharp pain in the eye just after a fly seemed to have barely touched her. Such flies can deposit their young so quickly as to escape ordinary observation. The child's eye became reddened and more painful, and she was taken to a physician, who removed five larvae from the eye.

When these larvae are deposited in the human nasal cavities it is

YOUNG MAN, YOU'RE GOING TO SEE MORE OF YOUR MOTHER—

Doctor Started You On Gerber's Today!

Baby will smile his approval when you spend the time in his playroom that you would otherwise spend in the kitchen. Gerber's will relieve you of tiresome straining and cooking—but even more important, Gerber's Strained Foods have the *uniformity* and nourishment that mean so much to baby's welfare.

Gerber's pioneer in research on Strained Foods. Gerber's maintain a laboratory where constant control is exercised over every process; where research goes on constantly so that *your* baby may benefit from the latest scientific discoveries in infant feeding... Furthermore, Gerber vegetables are *Home Grown.* Actually, at the doors of Gerber's shiny kitchens the farms begin. Do you wonder that *more* mothers buy Gerber's?

You are invited to visit our plant when touring Michigan.

PEAS . . . BEETS . . . CEREAL . . . GREEN BEANS
VEGETABLE SOUP . . . TOMATOES . . . SPINACH
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We invite you to enjoy MILK this tempting way!

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more readily digestible than milk itself

Make rennet-custards with either:

"JUNKET" RENNET POWDER—Already sweetened and flavored for making an endless variety of rennet-custards. Made in a minute—just add to LUKEWARM milk. No eggs, no baking, no boiling. Six delicious flavors:

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"JUNKET" RENNET TABLETS—Not sweetened or flavored—add sugar and flavor to taste. More economical for making rennet-custards, easily digested milk foods for infants and invalids. Also for making smoother ice cream with less cream in hand freezers.

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often a serious affair. A violent irritation follows, and the victim usually thinks of a "hard cold" that he took while sleeping in the open. The irritation increases, and often the worms in entering the throat or larynx obstruct swallowing or breathing so seriously that death may result if relief is not prompt. In about ten days the larvae mature and drop out, but the pain is always nearly unendurable and the shock considerable. Where such flies exist one should never expose a child in the open unprotected by mosquito nets, as in young children such infestations are always dangerous.

Some flies are very large, more than an inch long. At the other extreme are some so small that they can hardly be seen. These are known under many names such as midges, sand flies and no-see-ums. There are many varieties, some of which are relatively harmless. All develop in water, and some must have rapidly running water, or they cannot live. Only one of this group will be mentioned. This is commonly called the buffalo gnat or black fly (Stimulium pecuarum). The eggs are deposited on stones and sticks in rapidly running streams; hence such flies are usually found in the hills. The larvae and pupae attach themselves to rocks in great numbers and are often mistaken for vegetable growths. These flies appear in enormous swarms and are often destructive to animals and make human life very miserable. A vivid account was given by the naturalist Agassiz in his work "Lake Superior" many years ago:

> Neither the love of the picturesque however, nor the interest of science could tempt us into the woods, so terrible were the black flies. This pest of flies, which all the way hither had confined our ramblings on shore pretty close to the rocks and beach, had been growing constantly worse, here reached its climax. Although detained nearly two days we could only sit with folded hands or employ ourselves in arranging specimens and such other operations as could be pursued in camp, under the protections of a smudge. One whom scientific ardor tempted a little way up the river in a canoe, after water plants, came back a frightful spectacle, with blood rings around his eyes, his face bloody and covered with punctures. The next morning his head and neck were swollen as from an attack of erysipelas.

The tricks which the flies play on man in their efforts at survival are many and varied. They menace his existence, and control of them is essential. Methods of control are considered extensively in many bulletins of the U. S. Department of Agriculture. As with other parasites, team work and persistence are essential if any worthwhile results are to be obtained.

[NOTE.—In the August issue, Dr. Skinner will discuss fleas and their tricks.]

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If a physician recommends Bicarbonate of Soda for relief from hyperacid types of indigestion, Arm & Hammer Baking Soda may be used because it is pure Bicarbonate of Soda. The usual dosage is one-half teaspoonful in one-half glass of cool water.

Thanks to this, modern housewives keep one of the handy sealed containers in their kitchens, another in their medicine cabinets. Our 92 years' experience in the production of Arm & Hammer and Cow Brand Baking Soda—they are identical—accounts for their purity and dependability. Available in almost any grocery store. Cost only a few cents a package.

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C'mon In-

"Work is work and play is play, 'and never the twain shall meet.' It's what you do that counts more than where you do it or over how many hours."

from "Exercise," in the August Hygeia

The Reading's Fine!

The August HYGEIA, is brim-full of timely articles, for example:

Weather and the Human Body

● Mark Twain discovered 136 different kinds of weather in New England in 24 hours. Maybe he was stretching it a bit, but you'll agree there can be many changes in the weather in a very brief time. How these changes affect the human body is explained in "Weather and the Human Body" in the August HYGEIA. The article points out that Uncle Joe's arthritis may not be such a bad weather prophet as you may be inclined to think.

The Play's the Thing

● We all know the value of recreation but sometimes we fail to choose a form of play which lets us leave worry behind. Dudley B. Reed continues his series on "Exercise" by evaluating different types of play such as: golf, dancing, moving pictures, playing cards and Sunday driving. He seeks to show what you can expect from each in the way of relaxation and enjoyment. This article helps to justify taking an afternoon off, now and then, to play golf or go fishing, provided the morning hours have been intensely productive. Read it and pass it along to the boss.

How to Reason With Children

● Managing children in the hot summer time takes on the proportions of a Herculean task unless a definite philosophy has been adopted by the adults in the home. In the August HYGEIA you will find a mother's solution to the problem which may help you over quite a few behavior bumps in the vacation road.

Also in the August Issue,

Picture Pages on Infantile Paralysis

CARE OF BABY'S SKIN • A BACKYARD SWIMMING POOL • EPILEPSY • THE VERSATILE TOMATO • OF MOSQUITOES AND MEN • PLAY YARDS FOR CHILDREN • HOW RESTRICTED IS THE LIFE OF A PATIENT WITH HEART DISEASE? • CLOSING IN ON CANCER.

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